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BITE SIZED SUPPLY CHAIN/LOGISTICS INFORMATION

"Good leaders have the humility to know when they need to ask for help. If I'm the smartest guy in the room, I'm in the wrong room!"

-Robert Sappio, CEO, SeaCube Container Leasing p. 28

SEE LEADERSHIP, p. **28**

.....



SOMEWHERE STAN LEE IS SMILING

The U.S. Department of Agriculture has removed "Wakanda" from its list of trade partners after it was temporarily listed in the Agriculture Tariff Tracker on the official USDA website. Wakanda is the fictional home of Black Panther, a Marvel Universe hero who is also the hidden isolationist country's monarch. A social media user discovered the error.

97.6%

of the nearly 295,000 companies that exported from the United States in 2015 were small businesses, accounting for nearly one-third of the \$1.3 trillion in exports that year.

-The Small Business Administration

A NEW SHERIFF

Amazon could be shipping **6.5 B** packages annually by 2021, surpassing volumes handled by UPS and FedEx.



20,000 Size of Amazon's

current tractor-trailer fleet—

what the company had approximately one year earlier

The massive increase is evidence of the technology giant's efforts to boost its delivery options, which have previously relied on third-party parcel delivery companies.

> —Morgan Stanley report



Self-Driving Trucks Butter Up

Plus.ai, a Silicon Valley-based provider of self-driving truck technology, completed the first coastto-coast commercial freight run with an autonomous truck for Land O'Lakes.

Spanning 2,800 miles from Tulare, California to Quakertown, Pennsylvania, in less than three days right before Thanksgiving, the hub-to-hub trip was the first U.S. cross-country commercial pilot hauling a fully loaded refrigerated trailer of perishable cargo.

The truck – carrying 40,000 pounds of Land O' Lakes Butter products – was equipped with Plus.ai's advanced autonomous driving system that utilizes multimodal sensor fusion, deep learning visual algorithms, and simultaneous location and mapping technologies.

"On its continuous cross-country journey, the Plus.ai autonomous truck safely navigated driving day and night through the expansive plains of Kansas, winding roads of the Rockies, road construction, multi-mile tunnels, over 11,000 feet elevation, and was greeted with rainy and snowy roads heading east, all in less than three days," the company said. "This is a powerful demonstration of the safety and efficiency that can be achieved when autonomous trucks become commercially available."



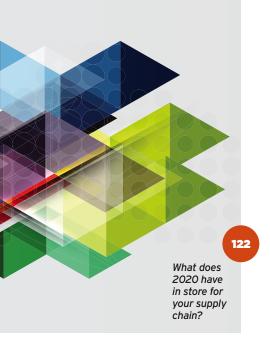
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THREE STEPS MANUFACTURERS CAN TAKE TO IMPROVE SUPPLIER COLLABORATION

Some simple changes in process, driven by technology, can turn spreadsheetwielding manufacturers into collaborative partners. Here are three

steps manufacturers can take to improve collaboration with suppliers and ultimately increase supply chain efficiencies. *bit.ly/improve_supplier_collab*



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by Keith Biondo | Publisher

Kith Bou

Ten Years From Now-Do You Have a Plan?

t's a new decade and time to project and plan for the next one. Ten years from today, what will your market look like? What kind of customers will you have and where will they be located? What will they buy? How will they buy? And how will you adapt your supply chain operations to serve them?

Ten years is a long time from now. Should you be planning or even considering these questions? Given standard business practice and an unpredictable economy, I'd say the answer is yes.

Technological innovations will certainly drive much of your long-term strategic thinking. Other important developments in the next decade will also drastically impact how we will conduct business. What are these developments and how will they impact planning as you advance along the demand-driven enterprise continuum?

During the past 10 years, we've seen how the emergence of consumer economies in the developing world drove a rapid evolution in trade as well as the logistics and supply chain structures and applications that supported and enabled that growth. Internationally, that growth will continue.

Trends and measurements indicate that a similar evolution in the United States is just over the horizon. Consumer and industrial buying habits, driven by U.S. demographic changes, will spur dramatic shifts in U.S. consumption patterns. In my view, the impact on enterprise operations will be even more dramatic than those wrought by artificial intelligence, robotics, and other logistics technology. Who buys, how they buy it, and what they buy really drives the supply chain.

Is that a far-fetched notion? Let's break it down. "Baby boomers have always had an outsize presence compared with other generations," according to the U.S. Census Bureau. "They peaked at 78.8 million in 1999 and have remained the largest living adult generation." Boomers—and what they buy—drove much of our economic activity in the past.

But new consumers will soon outnumber baby boomers by two to one. Add millennials (born 1981-1996) to Gen Xers (born 1961-1981), and a very different consumer and style of consumption will drive the economy of the next decade. And as they age, boomers, millennials, and Gen Xers will change what they buy in important ways.

For example, for the past 10 years, Gen Xer consumers have lived off discretionary spending. "U.S. adults aged between 21 and 38 years old will begin to prioritize 'necessity spending' over the next decade," Bill Smead, founder of Smead Capital Management, told CNBC.

"Necessity spending" means young adults will soon move away from buying "Apple devices, craft beer, and Chipotle burritos," Smead said, and instead spend their savings on bigticket items such as cars, houses, and the things that furnish them—appliances, furniture, and other home goods.

"We have got 89 million people between 21 and 38 years old who are about to start their lives, form households, do incredibly economically impactful things," Smead added.

What's more, we've got the lowest interest rates in U.S. history. "We are practically giving them the money to buy houses and buy cars" and other big ticket items, he said. Smead's prediction? Strong economic growth will continue in the United States, and we will therefore be less reliant on global trade even as global economic activity grows.

Wait, there's more. By 2030, one in five, or more than 70 million Americans, are projected to be age 65 and over, according to U.S. Census data. Many of these retirees will transition to lower-cost states. That means more high-end consumption as they set up new households with lots of disposable income from proceeds from the expensive real estate they left behind.

Add newly arrived consumers whose fertility rate percentages far outstrip native-born consumers, and it's clear these new arrivals will drive higher levels of consumption as well.

By 2030, the U.S. population is projected to be 350 million. Add the new level of buying and the uptick in consumption of "big-ticket" items to the existing consumption habits of boomers, Gen Xers, and newbies, and U.S. economic activity will explode. Boom times are just over the horizon.

Considering these projections, you do need a long-term plan. Ten years from now? 2020 will be 2030 before you know it.

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CHECKINGIN

Ten Minutes From Now– Do You Have a Plan?



Felecia Stratton, Editor

While the publisher is focused on planning for a far-off future, I'm focused on providing practical information that you can use in the here and now. Leaf through this edition for the next 10 minutes, and you'll find plenty of practical examples to help you navigate 2020.

The content we provide is specialized because the *Inbound Logistics* audience is different; you have self-identified as being interested in changing your business

flow from the "push product at the market" model to one that allows you to answer market demands as seamlessly as possible.

Driving a business migration toward becoming a demand-driven enterprise is complex. We try to make that transition easier by offering content that shows how others have solved challenges along that journey. We hope that their solutions will inspire you.

For instance, BASF Corp.'s vision for the next six to 12 months is to continue moving from a proactive approach to predictive logistics and shipping operations. It expects operations to be about 80% predictive in 2020 (*page 249*).

In "Reshaping the Supply Chain" (*page 108*), you'll find several examples of companies implementing dynamic changes to their business operations. For instance, see how leveraging IBM's Sterling Supply Chain Suite limits imbalances in inbound product flow that interrupt manufacturing and sales fulfillment.

Many experts tracking transportation costs predict increases in 2020 from 2% to 5% depending on your mode, location, and buying process. Capacity is always fluid and out of your control. But there are ways to offset predicted increases. "Ship More, Pay Less: Controlling Transportation Costs" (*page 144*) offers advice on holding down direct transportation costs by focusing on three areas: contractual relationships, day-to-day tendering, and invoice audits.

If you have more than 10 minutes to spare, check out the many other examples in this expanded edition.

As it has for the past 26 years, the January edition spotlights the leaders in logistics in the Logistics Planner (*page 289*). The companies that chose to participate understand your demand-driven challenge and offer inspiration and solutions that will enable your success as you work to change your business philosophy.

Putting the content together with the solutions that the Planner participants offer should make developing your strategy for 2020 in the next 10 minutes, 10 days, 10 weeks, or 10 years (just ask the publisher!) that much easier.

Felecia Stratton



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GOODQUESTION Readers Weigh In

Will the supply chain management function be obsolete in 10 years? Why or why not?

Even as Al/machine learning continues to take more of a role in the supply chain, in an industry as complex as ours, there will always be a need for the human aspect.

As efficient and liberating as technology is, it can't replace the value of veteran industry professionals who have historical knowledge of transportation cycles or a trusted partner who can shape individualized solutions on the fly.

> *—Micah Holst* President Ascent International

Technology is constantly creating new supply chain efficiencies, and with each technological evolution, employees can redeploy to revenue-generating activities.

But these changes won't make supply chain management obsolete in the next decade. There will always be a relationship component to supply chain management that cannot be easily replicated.

> -Brian Thompson Chief Commercial Officer SMC³

A big, capital-lettered NO. Three reasons: First, by nature and definition, supply chains integrate a number of critical operations including procurement, manufacturing, distribution, inventory management, warehousing, order fulfillment, and demand satisfaction and management. As we continue to generate more data and integrate more operations internally within firms and externally among supply chain partners, we will need the insights from supply chain management to guide our path.

Second, as new marketing and sales channels emerge, we need supply chain management to fulfill customer desires and requirements. For example, we owe the success of omnichannel businesses to the expertise built within supply chain management. We will see more companies improving their supply chain capabilities to respond to omnichannel requirements.

Finally, while a decade or two ago, supply chain management was not a mainstream business functionality, now it is. Thanks to the success of companies such as Amazon, Walmart, UPS, Intel, and Zara, students are aware of career possibilities within a supply chain. While we have a talent gap within supply chain management, we also have an increased awareness among millennials to serve in this field.

-Burcu B. Keskin

Professor, Operations Management Reese Phifer Fellow in Operations/Manufacturing ISM Associate Department Head The University of Alabama

Supply chain management performs

significant functions: management and alignment of resources and materials, integration and coordination processes, and design of complex logistics systems. Even though the U.S. Bureau of Labor Statistics expects only 2% growth between 2014 and 2024 for logisticians (often supply chain managers), there will be continued demand.

> -Dr. Charles M. Russo, IFPC Full-Time Faculty, College of Safety & Emergency Services Columbia Southern University

Zero chance. Supply chain success is dependent upon human relationships, collaboration, partnerships, leading and influencing, servicing customers, and the like. Robots, algorithms, and other new technologies will make certain jobs obsolete, but not the function of supply chain itself.

> --Rodney Apple Founder & Managing Partner-Executive Supply Chain Recruiter SCM Talent Group





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GOODQUESTION

Will the supply chain management function be obsolete in 10 years? Why or why not?





My response depends on the job and function. SCM is not different from other areas and technology makes a major impact. So, the answer is yes, the jobs of the future in the SCM area will be different and some of the current tasks/jobs can be eliminated/modified drastically due to advanced robotics and AI in the SCM system.

> -Dr. Maling Ebrahimpour Dean, College of Business Alfred J. Verrecchia-Hasbro Leadership Chair The University of Rhode Island

Digitization will bring the death of supply chain management. In a digitized supply chain, companies can capture, analyze, and integrate high-quality, real-time data that enables automation, IoT, predictive analytics, AI, and robotics. Supply chain management—and by default, supply chain managers will require a completely different skill set and capability.

In 2020, supply chain leaders will shift from managing people to designing and managing information. Concepts like digital control towers will continue to be adapted.

-Ron Volpe

VP, Apps Business Development Tradeshift Automation requires a lot of human involvement to be optimal. We have automated drop ship onboarding processes for years and the automation always ends up supporting, not replacing, clients' onboarding teams.

—Azad Sadr Director of Communications, Dsco

While automation and other technologies are increasingly utilized in supply chain, the supply chain management function will still exist in 10 years and actually be more important to a company's ability to compete. However, supply chain management leaders and teams will need different skills than in the past, as seen by the rise in data analytics within supply chain programs at universities.

> *—Chris Gutierrez* President, Kansas City SmartPort

No. With AI and machine learning, we'll be capable of putting more pressure on supply chains with less human interaction. However, we'll need to

increase our analytical and deduction skill sets to make decisions quickly and extract as much profit as possible from our increasingly complex supply chains.

—Ashley Yentz Vice President of Supply Chain Solutions LeanCor Supply Chain Group

It won't. Looking back, people felt ERPs were enough to drive company operations. Big mistake. Data processing will never replace the human knowledge, adaptability, interpretation, and analysis needed in the SCM field.

-Carlos Rangel, MSSCM, CSCP Supply Chain Management, Procurement,

Supply Chain Management, Procurement, Warehousing and Logistics Professional

Three key functions of SCM-

production, sourcing, and logistics—are fundamental to cost efficiency (expenses) and customer responsiveness (revenues). Therefore, the SCM function will continue thriving because it encompasses interorganizational perspectives and pivotal activities vital to financial performance.

> *—Gerard Burke, Ph.D.* Parker College of Business Georgia Southern University

SCM will be alive and well in 10 years

since it involves multi-organizational linked processing actions that transform raw materials into a product provided to customers. There is no apparent way that all the required transforming actions could be done in one action, link, or step.

-Paul Battaglia, DBA, CIA, MPM Associate Professor (Virtual Campus) Program Director for Masters in Logistics Management, Florida Institute of Technology

Have a great answer to a good question? Be sure to participate next month. We want to know:

What two supply chain terms do people always mix up? How would you clear up the confusion?

We'll publish some answers. Tell us at editorial@inboundlogistics.com or tweet us @ILMagazine #ILgoodquestion



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[INSIGHT] DIALOG @ILMagazine

SUPPLY CHAIN

Inbound Logistics is beautifully crafted. Cheers to the creative and writing team.

> Tammy Long Apache-Logical, JV Public Affairs Officer, Gateway Logistics Element NASA Kennedy Space Center

Re. What's the Word? bit.ly/checking_in_Dec2019

I enjoyed your recent editorial on 2020 terms for supply chain vocabulary, especially your caveat regarding NJ/ CA attempts to frustrate the win-win gig economy, which ends with a terse but loaded coda: "The problem? Taxes!" I can imagine Churchill exclaiming, "Seldom in the annals of editorial discourse has so much meaning owed so much to so few words."

– Carl T. Holst Knudsen

Re. Good Question: When choosing a logistics provider, what's more important: cost or customer service? bit.ly/costORservice

Customer service wins out every time. While selecting the low bidder might help the balance sheet, the excuse doesn't hold up when you default on the service promise. Your customer doesn't care you chose the cheapest LTL shipping company. When your customer's shipment is stalled because your freight company cut corners, your reputation gets tarnished.

> —Eric Allais President & CEO PathGuide Technologies

Re. The Death of Your Profession? bit.ly/SCM_prognosis

Wow. The death of supply chain management is quite a fairy tale posited by some academics. Every month, our three supply chain specialists work through about \$1.3 million in purchase orders for our "engineered to order" products. They are expected to find ways to meet our production schedule as we have customers' production dependent on our product delivery. We consider our supply chain department a profit center.

We recently had a manufacturer who introduced a new software platform that torpedoed their ability to deliver

Fast **TAKE**

Industry leaders are forecasting the impact of the Drug and Alcohol Clearinghouse mandate on capacity to be anywhere from 3% to 10%. For comparison, the impact to capacity from the ELD mandate was ~3%. What's unique about this, however, is that while the ELD mandate decreased the

amount of time drivers could spend on duty, the drug and alcohol clearinghouse is simply taking drivers off the road.

Recently the FMCSA also decided to double the number of random drug tests administered in 2020 because the positive testing rate increased to 1% in 2019. Another important factor to consider is that the FMCSA is screening for marijuana use, which is now legal for recreational use in 11 states. Among that list are California, Illinois, and Michigan, which have large populations of truck drivers.

—Erik Malin Vice President of Operations, Loadsmart on why the Drug and Alcohol Clearinghouse mandate, which became effective January 2020, is expected to drive up rates

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product in a timely manner. We were forced to look for manufacturers that made a similar product in order to meet production schedules.

One of our large defense contractors had a security breach in their supply chain; some nefarious polecat sent out purchase orders in their name with an erroneous delivery address. How long would it take to realize this thievery if the information was all self-contained within the new software platform?

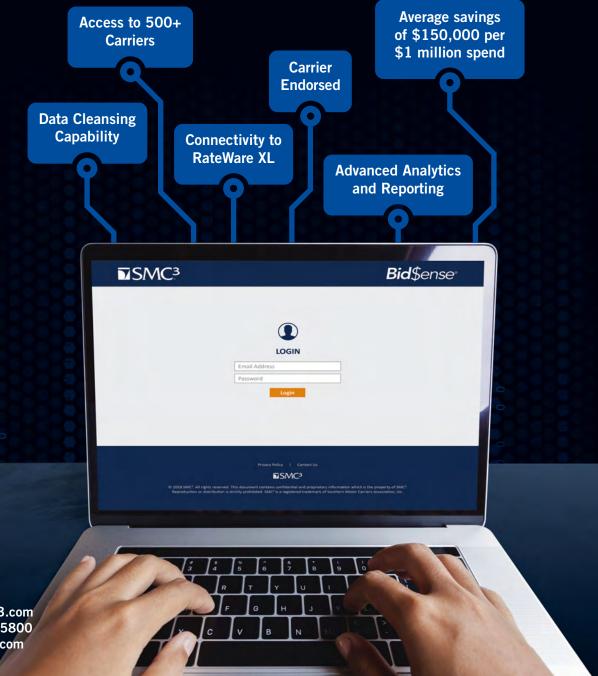
The Harvard Business Review article (bit.ly/SCM_death) you referenced will have to be about a mind-boggling software platform that absorbs the particular supplier business network(s). Who is going to enter the revolving data into the visible world of supply chain to keep it running smoothly? That person will have to be a mind-boggling guru in a perfect world of inner peace an academic.

—Kent Sorenson Senior Supply Specialist, Wolf Robotics, a Lincoln Electric Company



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10 TIPS

Optimizing Your Warehouse

Warehouses and distribution centers will always require reconfiguration, optimization, and forward thinking to perform their best. Even small steps can help make progress.

1 FOCUS ON LABOR RETENTION.

While salaries and benefits always matter, finding ways to make your company more appealing also pays dividends. Training, facility comfort, scheduling, and the ability to participate in process design help people understand they are valued. These small investments pay off in better employee retention and the ability to withstand talent raids.

2MAKE MEASUREMENT A WAY OF LIFE.

It's hard to measure intangible things like worker dissatisfaction, hidden inefficiencies, and the cost of disgruntled customers. But you can track, measure, share, and improve these things that are quantifiable ship times, error rates, damage, and much more.

3 REDUCE WALKING AND TRAVEL TIME.

In poorly laid out facilities, some workers can spend more time traveling than working. Good facility layout keeps people in the right zones for picking or packing. The idea is to reduce transit time and increase working time.

4 MONITOR YOUR SLOTTING STRATEGY.

Busy operations re-slot fast-moving, high-profit SKUs every day. Slotting the facility once and leaving it that way for years wastes time and money.

5 SAVE SPACE, CONCENTRATE STORAGE.

Space is costly. Storage solutions like carton flow and carousels reduce the space needed to store the same items. Taller racks and mezzanines take advantage of unused vertical space. Good layout strategies may allow you to continue to operate in the same space as you grow.

6 ORGANIZE WITH CARE.

Divide your facility by zones based on pick type. This simplifies order picking and re-slotting because similar items with similar storage and picking methods are grouped together.

FOCUS ON SMALL PARTS.

Small parts are more difficult to count, measure, and handle than large ones. Solutions may include prebagging small items into standard quantities, so that a picker who must pick 13 can grab a bag of 10 and three singles to make the right pick. Another is to incentivize the purchase of standard quantities that can be premade. If it's feasible, use automation such as lightor voice-directed picking to reduce errors and increase speed.

....

AUTOMATE WHERE IT MAKES SENSE BUT UNDERSTAND THE ROI.

Understand the payback, not just the benefits, of automation. Replacing multiple shifts of workers with a \$150,000 palletizer can be intimidating until you do the math. You don't have to fully automate, but finding logical functions that can be automated pays dividends.

9 make it ergonomic.

Constant lifting, bending, and stretching contributes to musculoskeletal disorders. Are your loads such that anyone can do the job? One company designed its operation so that anyone in the plant—whether built like a linebacker or a ballerina can physically handle every job. This helped broaden the labor pool and increase throughput while reducing injuries.

$1\,{ m O}^{ m FIND}$ the right balance between speed and accuracy.

Look for the net benefit of your current picking accuracy rate versus the net benefit of adding people, technology, and processes to boost it. Calculate the cost of both late and inaccurate picks as your starting point.

SOURCE: SCOTT STONE, DIRECTOR OF MARKETING, CISCO-EAGLE

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Fast-Moving Consumer Goods



WHAT'S THE DEAL WITH FMCGs?

Fast-moving consumer goods (FMCGs) are products that sell quickly at relatively low cost. Consumers purchase these goods frequently and consume them rapidly; retailers price them low and sell them in large quantities.

FMCGs have a short shelf life because of high consumer demand-for soda and confections, for example-or because they are perishable.

TYPES OF FMCGs

- Baked goods
- Bottled beverages
- Cleaning products
- Cosmetics and toiletries
- Dry goods, such as raisins and nuts
- Fresh and frozen foods
- Medicines that can be purchased without a prescription
- Office supplies
- Prepared, ready-to-eat meals
- Processed foods, such as cereal and boxed pasta



TOP 10 FMCG COMPANIES

- 1. Nestle
- 2. Johnson & Johnson 3. Procter & Gamble
- 4. PepsiCo
- 5. Unilever
- 6. AB InBev
- **7.** Coca Cola
- 8. JBS
- 9. Phillip Morris
- 10. L'Oréal

4 THINGS FMCG RETAILERS NEED TO KNOW

FMCG retailers need to be aware of four key areas as they build their future omnichannel supply chains, finds RSR Research's Supply Chain Management 2018 report.

Change signals. Retailers are increasingly aware that new digitally enabled consumer behaviors are challenging a key operational assumption—that consumers will start and end their consumer journeys within the four walls of the physical store. Of the FMCG retailers that responded to the RSR survey, 70% see the change in the pattern of consumer demand and how they fulfill it as the top business challenge affecting supply chain management.

Learning to play with new service models. All FMCG retailers have adopted the self-service model to some degree, but omnichannel consumers who want something more are challenging that model. However, many retail executives are concerned that omnichannel orders are not profitable, with 70% of FMCG retailers stating that quantifying labor and shipment costs for cross-channel fulfillment is a challenge in supply chain management. To address this concern, retailers need to implement operational key performance indicators that will measure the new costs. When these are implemented, retailers will be able to prioritize improvements to the supply chain to meet the new demand.

Change starts at the top. FMCG retailers, more than other verticals, cite "lack of top-level understanding of supply chain issues" and "no internal appetite" for changing the supply chain as top organizational inhibitors. So, whether senior executives want to change or not, they have to, as new formats and agile new competition are already challenging traditional operators' most basic operating assumptions.

What was a differentiator is now a necessity.

Previously, supply chain masters offered products

at low prices to consumers, but since the relatively halcyon days of the late 1980s to 2000, using low price as the primary competitive wedge has been harder to do, as other retailers have figured out ways to compete at that level. Retailers that responded early to the looming challenges created by consumer omnichannel shopping behaviors gained a strategic advantage. But what was a strategic differentiator has now become a strategic necessity, according to 60% of respondents. Retailers are learning how to calculate demand with greater precision than before and how to manage the complex last mile of the omnichannel supply chain. These efforts are tied to how retailers are redesigning the role of the store as an omnichannel order fulfillment center, in addition to offering a great experience for consumers who choose to use the store in the traditional way.

- BRIAN KILCOURSE, MANAGING PARTNER, RSR RESEARCH

70%

45%

50%

50%

50%

46%

TOP FMCG BUSINESS

AFFECTING SUPPLY CHAIN MANAGEMENT

The pattern of consumer

has changed

buy strategy

INHIBITORS

of supply chain issues

challenges

FMCG

demand and how we fulfill it

Demands for more localized

assortments are changing our

OTHERS

TOP 3 ORGANIZATIONAL

TO SUPPLY CHAIN MANAGEMENT IMPROVEMENTS

Lack of active top-level understanding

32%

No internal appetite to redesign our

supply chain to meet current business

Lack of coordination between supply

chain, merchandising, and marketing

FMCG OTHERS

40%

48%

31%

CHALLENGES

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LEADERSHIP Conversations with the Captains of Industry

Conviction, Clarity, Compassion



Bob Sappio starts his workday at 4:30 a.m. and sends LinkedIn messages to his team on Saturday night. He's committed, passionate, and a straight shooter—and gives his all to SeaCube's technological and cultural transformation.

by Merrill Douglas

Bob Sappio's forebears, starting with his immigrant grandfather, all served in the U.S. Navy or Merchant Marine. Hoping to follow them, Sappio aspired to attend the Naval or Merchant Marine Academy. But family obstacles got in the way.

"I wound up going to Wagner College on Staten Island because they gave me a little money to play football," Sappio says. At least that college afforded a view of ships sailing in and out of New York Harbor. After graduation, with the sea still on his mind, Sappio crossed the water to Manhattan for an entrylevel job with American President Lines (APL). "I stayed with that company for 30 years," he says.

Three decades with a major container carrier gave Sappio the perfect background for his latest role, chief executive officer at SeaCube Container Leasing. Sappio told us what it's like to lead the fifth-largest container leasing company in the world and the leading lessor of refrigerated containers.

IL: Tell us about an early work experience that helped shape you as a leader.

APL's New York location was the company's largest regional office in North America. When executives visited from our Oakland headquarters, I paid particular attention to the preparations for their visits. I also observed how the executives comported themselves and how they interacted with the team. When a leader held an office meeting or a town hall meeting, I'd ask myself, "How would I want to be treated by that person?" I learned as much from the people who weren't good leaders as from those who were.

IL: What's at the top of your agenda at SeaCube these days?

Transformation, change, and getting the culture right have been at the top of my list since I became CEO three years ago. For example, we're emphasizing transparent sharing of information. People need to share information to meet shared objectives. I actually had a plastic card made and gave it to every person in the company. It says, "What do I know? Who else needs to know? Have I told them yet?"

We're also spending a lot of time on technology. Everybody today who ships anything wants an Amazon-like experience. It's no different with containers, especially when it comes to refrigerated equipment for perishable shipments. Shippers want to know where their containers are, and they want to know the temperature and humidity. We spend a lot of time talking with technology vendors about how to help our customers—the carriers—provide that information to shippers. We're also interested in all the data we can collect through the Internet of Things and how we can use that data to support better decisions.

IL: If we followed you around for one week at work, what would we find you doing?

If I were spending that week at our New Jersey office, you'd find me at my desk between 6:30 a.m. and 7 a.m. I spend at least the first hour or two on email and phone calls with our offices in Asia and Europe. For the balance of the day, you'd see me interacting with our management team. I consider myself to be hands-on, although not suffocating. I'd also be on the phone with customers, lenders, investors, and board members.

IL: When you get up in the morning, what are the first two things about the business that you check?

When I get up, usually between 4:30 a.m. and 5 a.m., I grab my phone or iPad to see what has happened overnight in Asia and what's happening in the morning in Europe. I also check on the cost of money and the cost of equipment, two things that are important to a leasing company.

IL: Which personal qualities are most important in a leader?

Conviction that what you're doing is right, clarity of direction, and competence to do the job are all important. Good leaders have the humility to know when they need to ask for help. If I'm the smartest guy in the room, I'm in the wrong room! I like to surround myself with smart people who have diverse opinions. Compassion and caring are also important. Communicate with people; bring them into the tent. If somebody makes a mistake, hug them a little more and try to show them what's right. You can be a tough and demanding boss and still be good and kind to people.

IL: How would your direct reports describe your leadership style?

They'd tell you I'm committed and passionate—maybe wound a little too tight because sometimes I send them

Sail Away

Despite his long career in shipping and his affinity for all things watery, Bob Sappio has yet to cross the ocean. "I'm a sailor, I'm a fisherman, I have a boat—but I've never been to sea," he says.

If Sappio could change jobs with another person for one day, there's no question what he would do. "I'd be a ship's master or a first officer—something that would get me on a ship—to sail under the Verrazzano Bridge in New York and out to sea. Just once, I would love to be able to do that."

LinkedIn messages on Saturday nights. They'd say I'm fair, tough-minded, and inclusive. I care about continuous improvement and I'm committed to the company building a rock-solid balance sheet. I care about our employees: I know their names and the names of most of their spouses and kids.

On the negative side, they might tell you I can be a little too intense. They tell me I have too many meetings, so maybe I take the inclusivity thing a little too far. But I think they'd tell you they enjoy working with me, and there's never a question about where they stand, because I'm the type of leader who tells you exactly what I'm thinking. We've got a great team of people at SeaCube; I'm thrilled to be working with them.

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

I like spending time with my family. I've been married for 35 years to a wonderful woman I met in college. My oldest son is an officer in the Navy, so unfortunately we don't see him often. My younger son lives and works in New York City, in supply chain. I love anything I can do that's near the ocean. We have a beach house on the Jersey Shore and a boat. I'm also a voracious reader. My wife tells me my two vices are buying too much wine and too many books.

IL: What have you read lately that you'd recommend?

I'm reading Sea Stories: My Life in Special Operations by Admiral William H. McRaven and I just finished Call Sign Chaos by Jim Mattis. He says something in that book that I love: If you're not reading hundreds of books, you're functionally illiterate because your own life experience isn't broad enough to teach you what you have to know.

READERPROFILE as told to Karen Kroll

Taking a Dip Into Supply Chain Management



FRANK ARMETTA is global vice president of supply chain with Sabra Dipping Company, a division of PepsiCo.

RESPONSIBILITIES: Leads procurement, strategic sourcing, manufacturing, warehousing, distribution reports, global engineering, and global quality. Also oversees the Australian and Western Europe businesses.

EXPERIENCE: Vice president, global manufacturing with Sabra; global manufacturing vice president for PepsiCo Worldwide Flavors in Cork, Ireland; and region vice president of operations with PepsiCo.

EDUCATION: B.A., History, 1989 Binghamton University. We're transforming Sabra's supply chain by expanding our plant warehouses so we can ship directly to more of our retail customers. On average, we've cut about 500 miles from most loads and lopped one week from the transportation timeline.

On a product with a relatively short shelf life, cutting five to seven days is enormous. Customers get fresher product, and we reduce our handling and shipping costs.

It's always challenging to invest in expanding a warehouse but we ensured the move would be strategic and offer significant efficiencies. The project has been successful and we have increased direct-to-customer shipments by 30% in recent years. We leveraged SAP and BluJay Logistics' warehouse management system competencies to make this happen.

We have transformed the business

to maximize not only food safety but also every opportunity to improve processes and be consistent daily. Along the way, Sabra has grown to capture and maintain more than 60% of the hummus category.

MORE THE SAME THAN DIFFERENT

Within Frito-Lay and PepsiCo, I've worked in multiple countries and cultures. My biggest takeaway is this: People are much more the same than they are different. They want to be treated with respect and to be recognized for their hard work. They want somebody to take an interest in what they're doing. Everybody wants that, whether they are in China, Ireland, or Texas.

When I was a kid, I planned to be a veterinarian, but life has a way of twisting and turning. During college, I got a job cutting grass at a Frito-Lay

J , J J J J

Frank Armetta Answers the Big Questions

1 What activities outside work make you better at your supply chain responsibilities?

Getting on my tractor and cutting grass is like therapy for me. It is a great way to recharge and get ready to attack the world again.

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

Don't worry about trimming the shrubs when your roof is leaking. In other words, before you work on the sexy, fancy things, you've got to make sure the basics, such as safety and fill rates, are there.

3If you could go back in time, what would you tell your 18-year-old self?

Pay closer attention when your family is speaking Italian. I grew up in an Italian neighborhood where everybody spoke Italian, and I never learned the language.

[IN PRACTICE]

plant in upstate New York. Even before I graduated, they promoted me into a supervisory position.

After 16 years in New York, I moved to Frito-Lay's Chicago office as vice president of operations for the heartland region. I was responsible for the company's largest manufacturing site, and all our warehouses and distribution systems throughout the Midwest.

Then I had an opportunity to move to Ireland with Pepsi Worldwide Flavors as vice president of global manufacturing. I oversaw 13 manufacturing locations in 11 countries.

I've never been technical, but I'm intellectually curious. When I was

a manager, I was able to run all the manufacturing lines because I had firsthand experience making Doritos, Fritos, and potato chips. That front-line experience gave me a real sense for what we do at all levels of the organization. It showed me how each level impacts the others, and how important they all are. That has helped me through my career.

FROM SEED TO SHELF

I moved to Sabra in 2014. Over the years my role has changed and expanded. Now I oversee the entire supply chain from "seed to shelf," as well as our Australian and Western European businesses. Prioritizing supply chain initiatives can transform a business, and doing so means working in close collaboration with farmers, co-ops, and other innovative partners. Supply chain work can be more exciting and innovative than it sounds and maintaining close relationships with vendors, suppliers, and strategic partners leads to meaningful progress.

No matter how technically complex a job is, it's all about people. I've had the opportunity to work with many fantastic people across the Frito-Lay organization.

I've also helped to develop many people who today are vice presidents and directors. I take a lot of pride in that.



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[IN FOCUS]

The Supply Chain in Brief

> SEALED DEALS

• Robotics company Magazino signed shoe manufacturer and retailer Lloyd Shoes GmbH as a new customer. Magazino's intelligent TORU robots will help employees select and store shoes in shelving racks at Lloyd's dispatch warehouse in Sulingen, Germany. Magazino can integrate additional TORU robots into an existing fleet in less than half a day.



• Casio UK renewed the outsourcing of its total UK supply chain operation to Yusen Logistics, extending the partnership to more than 30 years. Yusen Logistics handles Casio's full range of products—including digital pianos, cash registers, watches, calculators, and digital projectors—for consumer and business markets.

• The **U.S. Transportation Command** awarded **Boeing** a contract to enhance and sustain the Integrated Computerized Deployment System. The logistics software application automates load planning and tracks cargo movements across land, air, and sea for the U.S. Department of Defense.



m&a

■ NFI, a supply chain solutions provider, acquired **G&P Trucking Company**, which provides asset-based transportation, nonasset drayage, and non-asset brokerage solutions.



■ Navis, part of Cargotec Corporation and a provider of software solutions to terminal operators and ocean carriers, acquired Jade Logistics, which provides an operating system for mixed-cargo ports and terminals.

■ VeriShip, a shipping expense optimization platform, acquired Valence, a software and managed-service company that tracks operational errors for sellers in Amazon's Fulfillment by Amazon program.

■ **Ontruck**, a digital road freight platform, acquired digital freight forwarder **Briver** from Wtransnet, a freight exchange in Iberia, to gain a foothold in the Cataluña region of Spain.

■ **Roadrunner Transportation Systems** sold its flatbed business unit for \$30 million in cash to an unnamed buyer.

■ **Prologis**, a logistics real estate company, acquired **Liberty Property Trust**, an owner of industrial space, for approximately \$12.6 billion.

■ Hillebrand, which manages the transport and logistics of beverages and other special-care products, acquired **Royal** Logistics and Royal Service Transport, which provide transportation and warehousing in the greater Baltimore area.

■ **Transportation Insight**, an enterprise logistics solutions and services provider, acquired freight broker **Meridian Logistics**.

■ **TrueCommerce**, a provider of trading partner connectivity, integration, and unified commerce solutions, acquired **Netalogue Technologies**, a provider of B2B e-commerce solutions.

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NOTED

> SHOVEL READY



NewCold and **B-Built** broke ground in France to build NewCold's automated coldstore, where automated storage and retrieval systems will move and store products in a dark, high-bay warehouse. Advanced software systems will direct the equipment and operators while products are kept in optimal condition.

Walmart chose Topeka, Kansas, as the site of its newest distribution facility in the United States. The DC is expected to open up 300 full-time positions during the next five years and create a total economic impact of \$635 million in the next 10 years. This is the fourth Walmart distribution center in Kansas.

> GOOD WORKS



J.B. Hunt Transport Services distributed wreaths from Harrington, Maine, to cemeteries throughout the country for Wreaths Across America Day in December 2019. Eighty-six drivers used 11 new military-themed tractors to help transport 28 loads of wreaths.

> RECOGNITION

• *Lloyd's List* presented its **Lifetime Achievement Award** to **Farid Salem** (*pictured center*), executive officer of the **CMA CGM Group**, a global container transportation and shipping company based in France. Salem, who helped grow the group to become a leader in container shipping and took part in CMA's merger with CGM, was honored for his exceptional contribution to the maritime sector.



• The Containerization & Intermodal Institute presented the **2019 Connie Award** to **Bruce A**. **Fenimore**, chief executive officer of Columbia Group. **Sara Mayes**, president and chief executive officer of Gemini Shippers Group, received the institute's **Lifetime Achievement Award**. Fenimore steered the growth of Columbia Group, a provider of inland and feeder transport services and equipment. Mayes is an industry veteran who shaped the fashion industry shippers' association model.

• The New York/New Jersey Foreign Freight Forwarders and Brokers Association named **David F. Adam**, chairman and chief executive officer of the United States Maritime Alliance, its **2020 Person of the Year**. Adam is the organization's chief negotiator in master contract bargaining and led the Bargaining Committee in negotiating a six-year agreement with the International Longshoremen's Association, which covers 14,500 port workers on the East and Gulf Coasts.

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NOTED

> SEALED DEALS

• Sports equipment company **True Sports** chose **Geodis Netherlands** as its European logistics partner to provide a customized racking layout that stores hockey sticks optimally and efficiently. The companies established a previous multiyear partnership in the United States and are reinforcing their global collaboration with this new contract.



• Michelin awarded a new threeyear contract to CEVA Logistics to handle its warehousing services and inventory management. Within its nearly 181,000-square-foot facility in Northwestern Spain, CEVA Logistics handles warehousing services, inventory management, and picking and loading of transport bound for Michelin customers and other automotive manufacturers.

• Unilever, one of the world's largest consumer goods companies, chose FM Logistic to manage the receipt, warehousing, order fulfillment, and co-packing of Unilever's

personal care products, such as Dove, at its logistics platform in Crépy-en-Valois, France. The contract also involves transporting certain products on behalf of Unilever. To better serve Unilever, FM Logistic expanded its capacity in Crépy-en-Valois to include 22 extra loading docks and storage room for 25,400 additional pallets.



> RECOGNITION

• ArcBest chair, president, and chief executive officer Judy R. McReynolds is among WomenInc.'s 2019 Most Influential Corporate Board Directors. McReynolds has 29 years of experience in logistics and transportation, including 22 years at ArcBest, and is the current chair of the American Transportation Research Institute board.

• **UNEX Manufacturing**, maker of order-picking and space-saving solutions, earned the Material Handling Equipment Distributors Association's **Most Valuable Supplier Award** for the fifth consecutive year. The award recognizes UNEX Manufacturing's accomplishments in 2019 and commitment to its dealer network, employees, and community.

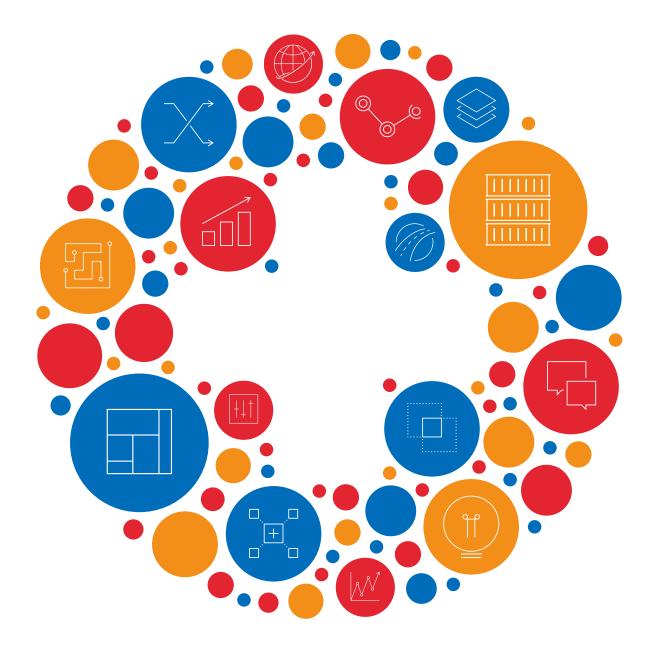
• Werner Enterprises was recognized as the Enterprise Business of the Year at the 2019 Applied Information Management Institute Tech Celebration for its outstanding application of technology. Werner associate Marina Brown was also named Tech Champion of the Year for contributing her time and talents to the nonprofit institute and other tech community initiatives to develop tech awareness and skills in others.

• Global logistics provider **Dachser's** optimized customs clearance process helped **Tetra Pak**, a multinational food packaging and processing company, achieve a **first-place airport efficiency ranking** from the Viracopos Airport in Brazil.



> GREEN SEEDS

DHL will debut StreetScooter's zeroemission Work L delivery van on both U.S. coasts in spring 2020 as part of a pilot project. The company aims to widely deploy the electric vehicles by 2023 to cut greenhouse gas emissions.



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NOTED

> GREEN SEEDS

Temperature-controlled logistics provider **East Coast Warehouse & Distribution** expanded its onsite clean renewable energy generation capabilities by adding 4,950 high-efficiency solar modules and inverters at its Elizabeth, New Jersey, headquarters.

> SEALED DEALS



• Global brewer Heineken extended JDA Software's cloud-based solution to most of its larger global locations to better manage demand

volatility and increase its digital planning capabilities during a large-scale digital transformation. The brewer also started a pilot project with JDA Luminate Demand Edge to explore artificial intelligence and machine learning.

• Ferrero USA, the

confectionery company known for Nutella and Ferrero Rocher, is implementing **FourKites'** predictive supply chain visibility solution



throughout its North American supply chain. Ferrero uses FourKites' machine learning-based platform to track inbound and outbound loads across truckload, less than truckload, and ocean transportation.

• Huhtamaki, a global food packaging specialist, extended its contract with **Transplace**, a provider of transportation management services and logistics technology, to help automate its daily transportation activities, including carrier and mode selection, real-time shipment tracking, and freight audit and payment.

• Base oil and lubricant manufacturer **Avista Oil** incorporated **Sixfold's** live shipment data platform to provide customers with real-time shipment information. Avista Oil incorporated real-time visibility of its shipments within one week of onboarding the platform with carriers.



• Schoolhouse Brewing, Georgia's first open-source, rotating brewery, deployed tracking technology from LocatorX. The solution allows Schoolhouse Brewing to track its kegs and better communicate with customers to improve engagement and retention.

• Family-owned farms **Fagerberg Produce** and **Bybee Produce** will extend their use of **IFCO** reusable plastic containers through 2020 to pack and ship onions to hundreds of retail locations throughout the United States. The containers are designed to facilitate maximum airflow during shipping, which helps keep the onions in peak quality from the farms to grocery retail locations.

• Pharmaceutical company **Boehringer Ingelheim** selected **NiceLabel**, a developer of label design software and label management systems, to help create a global standardized labeling process to achieve seamless enterprise resource planning integration, make label changes easier, and improve operational efficiencies. NiceLabel's document management system enables Boehringer to replace its manual quality-control procedures with a digitized process.

> UP THE CHAIN

Paul Babbs was named chief supply chain officer at Marks & Spencer to help the British multinational retailer revive its clothing division. Babbs had been with Adidas for the past 12 years and was most recently its chief supply chain officer.

Robert "Joe" Mills was appointed vice president of supply chain at medical device company **Soliton**. Mills will help the company prepare for the 2020 launch of its tattoo removal device.

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[IN FOCUS]

Shaping the Future of the Global Supply Chain

Autonomous Ship: Maiden China?

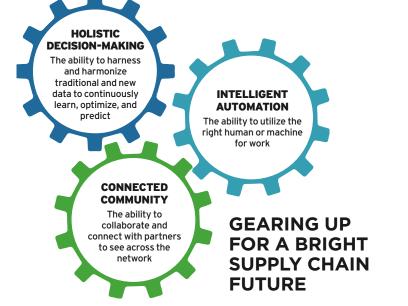
AKEA

China's first unmanned cargo ship completed its test voyage in December 2019, marking a significant milestone in autonomous shipping. The ship, *Jin Dou Yun O Hao*, successfully delivered cargo from Dong Ao Island in Zhuhuai to the No. 1 pier of the Hong Kong-Zhuhai-Macao Bridge.

Measuring about 42.2 feet long and 12.5 feet wide and designed to travel at 8 knots, the vessel is operated by automatic navigation technology and remote control, and is equipped with an electrified power plant. The ship can save shipbuilders more than 20% on construction costs and 20% on operational costs, reduce fuel consumption by 15%, and significantly reduce emissions, according to developer Yunzhou Tech.

The maiden delivery comes after the ship had already completed a number of remote control and autonomous navigation tests. Yunzhou Tech began developing the ship in 2017 in collaboration with Wuhan University of Technology and the China Classification Society, and delivered it in November 2019.





Logistics providers, retailers, and other large global movers are applying a mix of enabling technologies and innovative business models to drive the efficiency and supply chain orchestration needed to meet tomorrow's package volume demand and capture market share, finds Deloitte's recent Future of the Movement of Goods study.

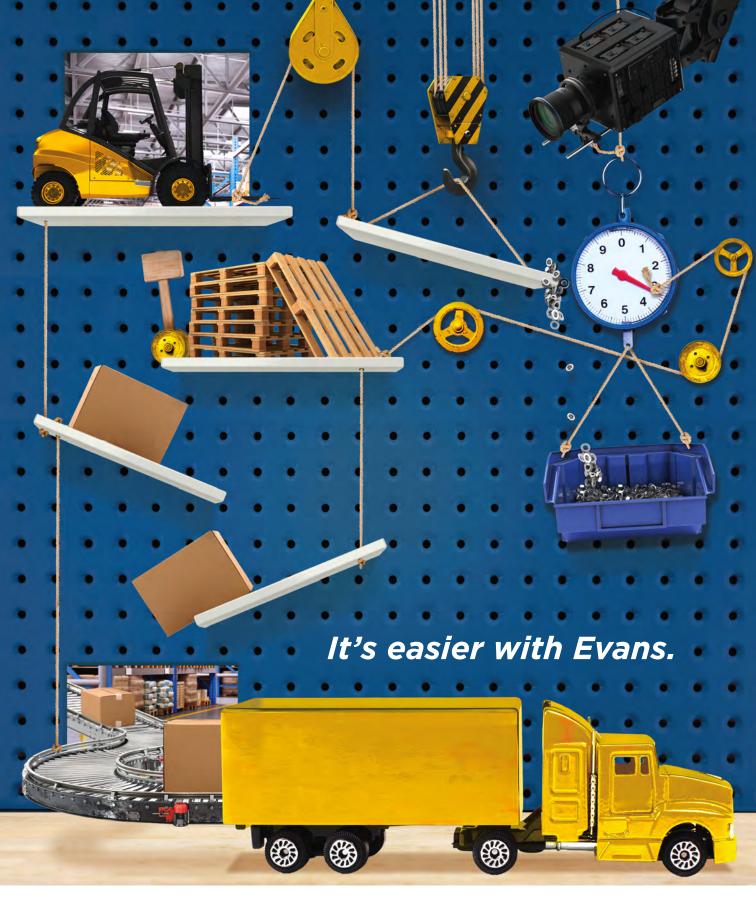
With growing e-commerce, shifting trade patterns, and infrastructure constraints, Deloitte identifies three key pillars that will likely underpin the next-generation supply chain:

1. Collaborate and connect with partners to see across the **network.** Horizontal partnerships and digital freight platforms connecting larger stretches of the global value chain signal the rise of a connected community, an expanding layer of digital connective tissue forming across the fragmented supply chain ecosystem.

2. Harmonize traditional and new data to continuously learn and **optimize.** Global movers harness a mix of connected transportation, cargo, and warehouses to evolve traditional, linear supply chains into dynamic networks capable of holistic decision-making.

3. Utilize the right human or machine for each task and automate digital processes. Foundations of a touchless supply chain are now visible as autonomous operations continue to enter pilot phases at every stage of the movement-of-goods continuum, beginning an era of intelligent automation and the collaborative power of human-and-machine logistics.

Working toward these objectives, the Deloitte study finds, can help companies evolve into integrated, intelligent, and automated end-to-end networks that can move more goods more quickly to more places.





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HOW GREEN WAS MY TALLY?

Almost one-third of online shoppers are willing to pay more to have their items shipped in environmentally friendly packaging, with those buying health and beauty products leading the way at 33%, according to Macfarlane Packaging, which analyzed packaging performance among e-commerce retailers in the fashion, health and beauty, home and garden, and food and drink sectors.

Asked for the first time about the green credentials of the packages they received,

39%

of online shoppers classify the packaging as not environmentally friendly. This is particularly evident among fashion shoppers, where the figure reaches

54%

Consumers also report that retailers overpacked their shipments:

23%

of respondents report too much packaging for their purchases, with health and beauty shoppers leading the charge at



Overpackaging remains a major conundrum for retailers who want to ensure their products arrive undamaged while managing customer demands for more sustainable packaging at the same time.



3 Big Barriers to IIoT Integration

From monitoring air quality in "smart cities" like Chicago and New York City to tracking health data in real time on a smart watch, the Internet of Things (IoT) is everywhere.

IoT applications look promising for the manufacturing industry as well: European aircraft manufacturer Airbus is developing Industrial Internet of Things (IIoT) technologies to provide valuable air passenger capabilities, such as knowing which seat belts are buckled and booking overhead storage space in advance.

The benefits of the IIoT seem limitless. So why is the supply chain still struggling to take full advantage?

1. Security. As cyberattacks grow more common, IIoT technology looks like the next attractive feeding ground for hackers. Because IIoT applications are built on many sensor nodes, the threat level increases drastically, whether it involves injecting bad data into the system or extracting data. Cybersecurity may require companies to integrate new practices and more advanced cyberthreat protection into their network to guarantee maximum security.

2. Reliability. With any new technology comes the question of reliability. Companies transitioning to IIoT are expected to have backup solutions because technological failure could

impact the entire supply chain and lead to irrevocable damages.

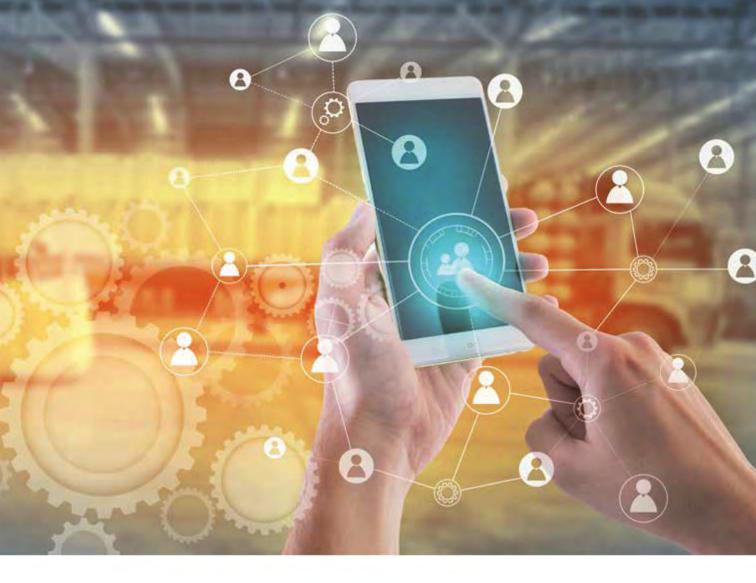
Industrial companies, therefore, need to clearly define the goals and boundaries of their IIoT projects. Based on each company's operational requirements and technology capabilities, IIoT solutions and tools must be well defined and executed.

3. Scalability. IIoT systems need to be adaptive and scalable enough to provide tailored solutions to multiple industries.

From a technical standpoint, IIoT solutions need to integrate with existing solutions through software or ad-hoc functionality. Functionality is typically achieved by using vendor-defined black boxes or by designing custom end-toend solutions.

Although vendor-defined black boxes can be implemented rapidly, acquiring and analyzing their data is difficult. Custom solutions provide easy access to data, but their proprietary nature means the system itself becomes a black box. In this configuration, black-box systems need to communicate properly, which is a challenge for the engineers developing the custom solution.

When upgrading systems or implementing new processes, companies and IIoT solution providers should work together to develop a solid strategy to avoid these security, reliability, and scalability pitfalls.



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TAKEAWAYS

Which ERP Trends Will Catch On in 2020?

Supply chain management involves planning, execution, control, and monitoring, and enterprise resource planning (ERP) solutions handle the physical aspects of supply. Nextgeneration ERP technologies have come to the forefront, and their powerful capabilities are having a great influence. Here are three ERP supply chain trends to watch in 2020.

1. Warehouse operations managers are more willing to apply automation and software. Approximately 23% of respondents to the 2019 Warehouse/DC Operations Survey report they are adding automation to contain costs, up from 15% in 2018. ERP systems or legacy warehouse management system options are the most popular choices. On top of that, 45% recognize that improving information technology in their warehouses is important for managing costs.

A positive and significant relationship also exists between

ERP systems and software configuration management (SCM) performance, according to an Emerald Insight study. The successful use of ERP software can help enhance the integration of internal business processes and information flow among different departments, as well as collaboration with outsourcing suppliers, customers, and supply chain partners.

2. Cloud solutions are replacing legacy, on-premise solutions. The worldwide public cloud services market is predicted to grow 17% in 2020 to \$266.4 billion, up from \$227.8 billion in 2019, according to Gartner. Cloud-based ERP systems offer the same level of functionality and security as their on-premise counterparts, while also reducing the cost and customization issues that plague traditional software. Not many companies need an on-premise system anymore, so naturally, the market for cloud SCM systems is expected to grow in 2020.

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TAKEAWAYS

3. The Internet of Things (IoT) is transforming

business models. From pushing products out the door to forming highly engaged service providers, IoT has a profound impact on ERP systems and how manufacturers accomplish their daily activities.

More companies will likely use IoT sensors in 2020 to ensure that specific data factors into the information displayed in ERP interfaces. Supply chain managers can lose sight of a product after it ships, but IoT capabilities allow them to monitor products, better inform customers about delivery timing, and offer additional services.

IoT also has a transformative effect on forecasting and inventory control. By directly sharing point-of-sale inventory levels to the shop floor, IoT can give manufacturing companies a more profitable make-to-order model rather than a forecast-driven model.

PROFITABILITY LIES IN THE CUSTOMER JOURNEY

Retailers who optimize their digital customer journeys find an increase in their margins three to eight points higher than retailers who don't optimize, according to a survey by

Manhattan Associates and IHL Group. Fewer than 30% of the retailers surveyed, however, have optimized these processes.

Retailers often attempt to patch together legacy systems to satisfy growing fulfillment demands because new omnichannel fulfillment methods—such as buying online and picking up in store, shipping from the store, and curbside pickup—can be costly and complex. These additional costs cut into margins and create a greater need for optimization.

"Retailers need to quickly pivot to solutions designed and engineered for the way consumers shop today and into the future," says Greg Buzek, president of IHL. "Those who have optimized these customer journeys are racing ahead in profitability. Those who have not are losing many points of margin on every sale."





Logistics Leaders Into Outsourcing

Outsourcing logistics services has become common-85% of logistics leaders expect their outsourcing budget to increase by more than 5% in 2020; 85% reported a similar budget increase in 2019, finds Gartner's 2019 Logistics Outsourcing Strategy survey.

TAKEAWAYS

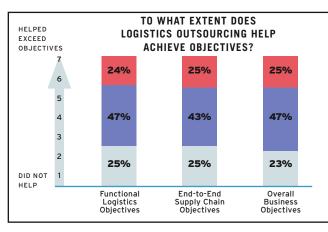
One reason leaders expect budgets to increase is that logistics outsourcing supports their business objectives. About 70% of respondents say they have met or exceeded functional, end-to-end supply chain and overall business goals with the help of logistics outsourcing, such as third-party logistics (3PL) providers.

Although the majority of logistics leaders view outsourcing as beneficial to their business, risks and challenges remain. The complexity of working with multiple partners is their biggest concern, followed by cybersecurity and the incompatibility of information systems between different 3PLs and their organization.

Nearly half of those surveyed say that updating technology systems, increasing speed to customers, and improving visibility are their most important goals for 2020. To be effective, logistics outsourcing strategies need to align with overall logistics priorities.

"To respond to these accelerated and evocative changes. logistics leaders need to understand the foundational elements of

good overall strategy, and rethink how they assess and develop logistics outsourcing strategy," says Courtney Rogerson, senior principal analyst with the Gartner supply chain practice.





Automated Materials Handling Gets a Lift

A labor market in which it is increasingly difficult to recruit, train, and retain workers is a major factor driving growth of the automated materials handling equipment market in North America, finds a report by BCC Research.

The market expects a compound annual growth rate of 7.1% through 2024 and may be worth \$28.7 billion. The greatest growth in the United States will occur in the Southwest region, which was worth \$1.3 billion in 2018 and is expected to grow to \$2 billion by 2024.

This growth means that information about the equipment and how it works is now more widely available, according to BCC. For example, improvements in printing technology materials and software control have dramatically advanced 3D printing capabilities.

Equipment breakdowns are responsible for unexpected costs for manufacturers, and making repairs in a timely manner is crucial. Getting spare parts can take time even when they're available at the manufacturer's location. 3D printing can duplicate the part and return the system to service quickly, and certain companies have launched specifically to handle these situations.

The automated materials handling equipment segment is projected to grow from

\$14.7 B in 2019 to

21.1 B by 2024, with a compound annual growth rate of 6.5% through 2024.

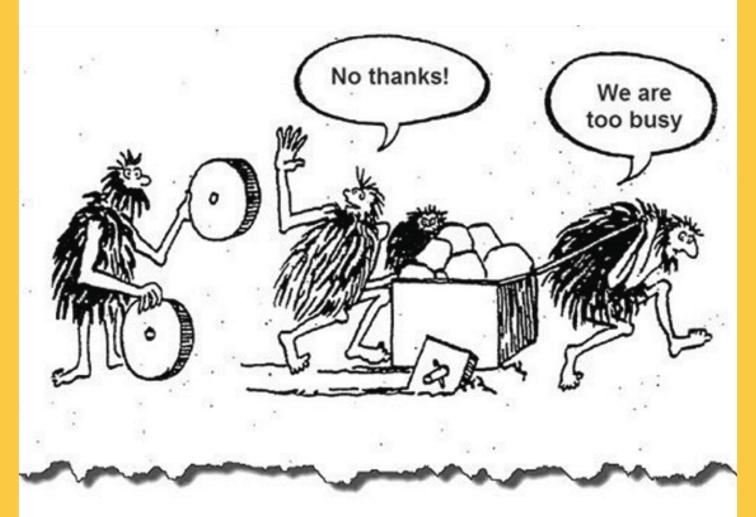
The warehouse and supply chain management software segment is estimated to grow from

\$5.7 B in 2019 to \$8.6 B

by 2024, with a compound annual growth rate of 8.5% during that period.



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I LIKE BIG-BOX AND I CANNOT LIE

Nearly half of small to mid-sized business (SMB) decisionmakers involved in distribution, logistics, and/or procurement estimate an increase in shipping spend in 2020 compared to 2019, and big-box retailers are influencing their strategy, finds logistics technology platform uShip's 2020 SMB Shipping Strategies report.

About 25% of decision-makers say the logistics strategies of Amazon and Walmart influence how their business thinks about shipping, and 27% say those strategies influence how their customers think about shipping.

The pressure from big-box retailers creates an underlying tension with companies that likely don't have the infrastructure or resources to support aggressive logistics strategies. As a result, SMBs are left to decide whether to invest in teams or technology. About 20% of SMB decision-makers would rather invest in the right logistics team over technology, while nearly 30% plan to make new technology a priority.

Meanwhile, 14% say investing in new technology is too expensive and 17% prefer to invest in alternatives to traditional shipping options such as UPS, FedEx, and freight brokers.

While parcel shipping remains a fairly well-oiled machine for many businesses, shipping large and bulky e-commerce furniture, vehicles, sporting equipment, safes, and more remains a mystery to many (*see chart*). And when they have oversized or fragile items to deliver, many SMBs don't find service reliable or affordable. Among SMB decision makers:

- 17% don't trust fragile items to arrive safely or unbroken
- 15% can't find a reliable carrier for oversized and bulky items
- 12% can't find an affordable shipping solution
- 11% don't know where to find alternative shipping options to organizations like UPS, XPO Logistics, and freight brokers

With the logistics sector moving quickly in favor of big-box retailers' strategies, SMB shippers need new ways to compete and address these pain points, especially for big and bulky items. SMBs should carefully evaluate all their options and make informed decisions when searching for new shipping and supply chain strategies or partners.

A LARGE AND BULKY STRUGGLE





Crossing the Final-Mile Finish Line

Total e-commerce revenue in 2020 will reach \$3.52 trillion, growing year-over-year at nearly 19%, according to global tech market advisory firm ABI Research. This explosion is forcing retailers to find faster and more convenient modes to reach the final mile.

Retailers will likely trade profits to continue investments in the e-commerce explosion. This growth depends on faster and more convenient modes to reach the final mile and yard. This includes the increase of one-day delivery and seven-days-a-week delivery in 2020 to reduce "click-to-door" time and combat the Amazon effect.

Online and in-store businesses are increasingly converging, with brick-and-mortar retailers serving as hubs closer to the customer and online stores directing package delivery to retail outlets. Investments will likely grow in buy-online-pay-in-store options.

China's e-commerce giants Alibaba and JD.com are more focused on growth through lower-tier cities, using fast-growing Pinduoduo's playbook to reach millions of people in rural areas. Singles Day, China's shopping holiday, will surpass all U.S. retail holidays in 2020 and beat 2019's record-setting \$38.4 billion for Alibaba alone.

Retailers need to address their increasing costs and consumer expectations through new business models and optimized transportation and logistics methods. Amazon felt the financial pressure with North American margin compression in 2019 as it grew investments in its next-day Prime delivery service. Other retailers are forced to expand their shipping options and reverse logistics to compete.

Self-driving vehicles will not join in the race to the final mile any time soon. Despite some media coverage, little driver-free commercial usage is underway beyond closed-course operations in the United States.

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TAKEAWAYS

ATLANTA HITS THE SPOT

Atlanta, Georgia, takes the top spot as the easiest market to find spot truckload van freight in 2019, according to a DAT Solutions report.

Because spot freight is unscheduled, it can be a useful indicator of economic activity. Take a look at the top 10 markets in 2019 for outbound truckload freight by equipment type.

VAN LOADS

- 1. Atlanta, Georgia
- 2. Ontario, California
- 3. Dallas, Texas
- 4. Houston, Texas
- 5. Los Angeles, California
- 6. Elizabeth, New Jersey
- 7. Chicago, Illinois
- 8. Indianapolis, Indiana
- 9. Joliet, Illinois
- 10. Columbus, Ohio

REFRIGERATED LOADS

- 1. Fresno, California
- 2. Atlanta, Georgia
- 3. Ontario, California
- 4. Philadelphia, Pennsylvania
- 5. Los Angeles, California
- 6. San Francisco, California
- 7. Elizabeth, New Jersey
- 8. Joliet, Illinois
- 9. Chicago, Illinois
- 10. Dallas, Texas

FLATBED LOADS

- 1. Houston, Texas
- 2. Dallas, Texas
- 3. Cleveland, Ohio
- 4. Atlanta, Georgia
- 5. Fort Worth, Texas
- 6. Joliet, Illinois
- 7. Pittsburgh, Pennsylvania
- 8. Los Angeles, California
- 9. Chicago, Illinois
- 10. Lakeland, Florida

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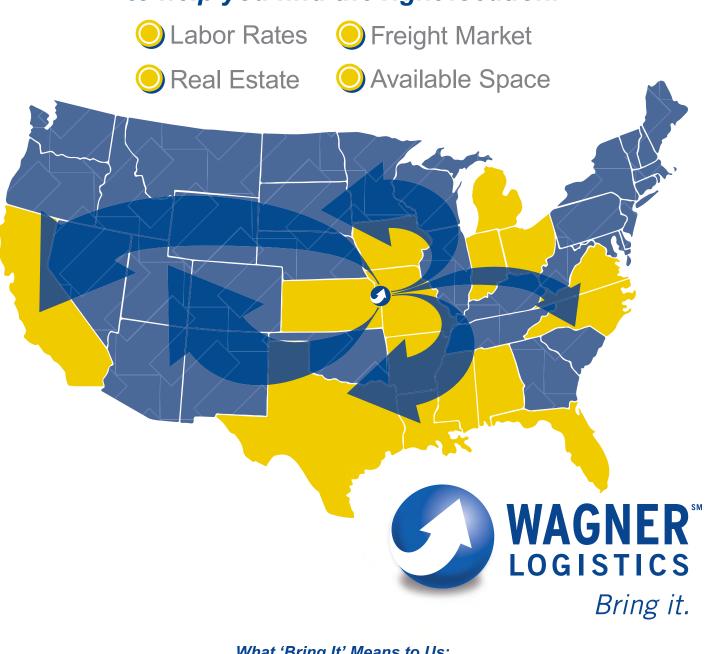
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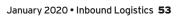
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	Chief Commercial Officer RPM
64	ROBERT KRIEWALDT
т	Senior Vice President Phoenix Logistics
66	THOMAS ELDRIDGE CAMPBELL
UU	Chief Strategy Officer Capacity, LLC
68	DAVID OSORIO
	Chief Operating Officer Over the Road Division, GLT Logistics



71

President Freight Management Inc.





Let Data Lead the Way to Optimization



Chris Hoffmeister Executive Vice President of Account Management Hub Group www.hubgroup.com

Using intelligent, actionable information, we work alongside our customers to proactively meet their own customers' needs. e're in an era where supply chain information is critical, and it's far more than letting consumers know when their packages will arrive. It's about having comprehensive insights into what's occurring throughout your supply chain 24/7/365, as well as the ability and flexibility to make both proactive and on-the-fly plan adjustments.

This is enabled by technology that offers up-tothe-minute data and end-to-end visibility. Advanced technology brings these benefits and more:

• The ability to track products throughout the lifecycle of the supply chain

Visibility at multiple touchpoints on freight–all the way from a manufacturer to a retail store or a consumer's home–is vital for making supply chain decisions and adjustments.

There's no more, "Hey, we need to do this over the next 18 months." It's now, "What can we do over the next two weeks (or sooner) to adjust to this change?"

Even as the volume of e-commerce purchases continues to grow, buyers are getting a much narrower delivery window than they were just five years ago. The only way to provide more accurate ETAs is by using technology, data, and touchpoints to track product throughout its entire lifecycle. These insights allow for better planning and flexibility when circumstances change.

• Operational efficiencies

Our continuous improvement team is always coming up with new ways to drive costs and inefficiencies out of our customers' networks and enhance how we conduct business. Technology ranging from our paperless cab, which reduces the amount of paperwork a driver has to interact with, to integrated systems that simultaneously improve order visibility and processing time, helps our customers, our suppliers, and our own business.

Additionally, our investments in in-cab technology and GPS units in containers have improved equipment utilization. This advantage was apparent in 2018 when capacity was tight: We were able to turn our equipment faster, which was a big win for our customers.

• Improved decision-making

Manufacturers and retailers are no longer satisfied with only knowing "Did my load arrive on time?" By constantly fine-tuning our data collection processes and feeding analytical data into advanced forecasting models, we can provide much more.

Using intelligent, actionable information from these models, we work alongside our customers to proactively meet their own customers' needs today, and in the future. Fully optimized supply chain intelligence is critical for anticipating and responding to demands as quickly and efficiently as possible.

Knowledge Translates to Efficiency

Understanding our customers' needs allows us to create optimal solutions to meet those demands. Better insights into what our customers need, combined with the wider picture we're capturing from thousands of data points, enable us to work even more effectively.

The more we know, the better we are positioned to pull the right levers to avoid delays, help customers keep inventories at the right levels, position assets where needed, and more.



Keeping Your Eye on the Prize: What Formula One Can Teach Us About the RFP Process



Jonathan Evans Director of Client Solutions Logistical Labs jevans@logisticallabs.com www.logisticallabs.com 312-999-9762

Bid management software is like a team boss, acting as the face-or rather, interfaceof the complex data streams racing through your network. ormula One (F1) is arguably the most data-driven sport that exists. Cars are equipped with approximately 150 sensors that generate 2,000 data points/minute– including tire performance, track temperatures, steering and braking patterns, and more. That amounts to roughly 4 terabytes of data per car per race. All this data is used to drive fast decisions on the track, where every second counts.

Fast decision-making is also vital in business, so what can we learn from F1 teams about carrier procurement? In both racing and bid management, steering toward a successful outcome takes more than a skilled driver or purchasing manager. It takes a reliable network, powerful technology, and rapidfire data exchange.

Data-Driven Decision-Making

Before data analytics became a key component to F1 races, winning or losing depended on the driver's split-second decisions on the track. Now, decisionmaking is largely driven by technology, allowing drivers to focus on their core competency–driving. Imagine if an F1 driver had to plot fuel management mid-race. How would that extra work impact their performance?

The driver at your organization is the person making procurement decisions. Selecting the right carriers for the right rates while covering commitments can be a challenge. It often involves massive lane spreadsheets, manual data entry, and mismanaged carrier relationships. Procurement decision-makers can lose focus–getting caught up in organizing Excel files instead of making decisions that lead to ROI. Like F1, technology can do most of the work for you.

Watch any F1 race, and you'll see team bosses staring at monitor banks while issuing instructions to the drivers. What may not be immediately clear is that those bosses act as the face of robust data streams flowing in from mission control centers full of race engineers. Bid management software is like a team boss, acting as the face-or rather, interface-of the complex data streams flowing through your network. You collect massive amounts of data every day, but if you don't have the right tool for analyzing that data to drive decision-making, you may be wasting valuable time.

An Empowered Network

F1 pit crews are notoriously efficient, and the best can change a car's tires in under two seconds. Something else that should take seconds? Adding carrier rates to your master response list.

Too often, shippers will send out RFPs, collect responses one by one, and manually add those responses to a master Excel document. This workflow is like a driver pulling into a pitstop and changing the tires himself.

When sending RFPs, if you are spending time re-entering the rates that carriers send back, your time isn't being used wisely. Bid management software can collect responses automatically within seconds of the carrier submitting them, which allows you to focus on strategic initiatives with the time saved.

In racing and business, efficiency is key. When managing your next RFP, make sure you have the right tools in place that eliminate inefficiencies and allow you to keep your eye on the prize–finalizing and executing the routing guide.



You Have a Data Problem. Here's What to Do About It.



Shannon Vaillancourt President, Founder RateLinx sales@ratelinx.com www.ratelinx.com 262-565-6150

To make 2020 better than years past, shippers must make this New Year's resolution: Get the data right before the product leaves the dock. rom time to time, logistics managers may disagree on the path to take to get from Point A to Point B. But the fact of the matter is that there is just one *best* choice. And the key to determining that best choice is data.

Sounds simple enough, but-as in so many things in business and in life-the devil is in the details.

Questions Before Answers

Data professionals that are worth their weight in, well, data, begin with more questions than answers:

- **1.** What are the significant data issues plaquing logistics companies?
- 2. What are the long-term implications of not solving data problems?
- **3.** How are companies currently handling these data issues?
- **4.** What are common internal hurdles that keep shippers from solving their data problems?
- 5. Why have technology providers struggled to solve data problems for shippers?
- 6. What should shippers look for in a data partner?

Individualizing the Answers

Each company faces unique challenges, of course, but individual solutions are found only against the broad backdrop of industry best practices. The goal of your data partner must be to create an integrated data platform that connects shipping, track and trace, and payment data to create one unified framework in order to give you insights into your company's complete logistics and supply-chain lifecycle.

Advanced analytics help you transform your logistics and payment data into powerful, actionable insights in real time so you can make the right choices to improve your supply chain.

Money Matters

Time is money, of course, but for shippers there is considerably more to the equation. The first step

in reducing shipping costs is to understand what influences the cost. Shipping costs are always determined by the same four characteristics:



When shippers have a clear picture of these four components, they now have a way to understand their costs. This is when they can see that there are some profit leaks, most generally due to outdated rules and the use of the incorrect carrier on some lanes.

Using a system with artificial intelligence and machine learning to determine data errors and fix them, allows you to diagnose process problems, and develop the right strategies that when deployed will prevent the profit leaks. Additionally, the cleansed data creates more accurate and powerful analytics and alerts.

The next step is to connect your order and tracking data to your financial data to get real-time access to your global freight spend. Reduce cost and optimize transportation strategies by automating your freight audit process and using financial-driven key performance indicators (KPIs). In this way, you have created an intelligent freight audit and payment solution tailored to your company's highly specific needs.

Partners in Progress

In the pursuit of these goals, the smart shipper knows that being in the driver's seat does not mean going it alone. Your data partner leverages advanced data analysis tools to solve even the most challenging supply chain problems.

Let 2020 be the year you harness the power of data to empower your organization with effective new supply-chain strategies. In doing so, getting from Point A to Point B will be more effective and profitable than it ever has been before.



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Technology Can Cure the Parcel Crisis at the Border



Bob Malley Managing Director Pierbridge sales@pierbridge.com www.pierbridge.com 508-630-1220

As e-commerce continues to increase globally, shippers have to streamline customs compliance to support their omnichannel strategy. he growth of e-commerce has driven global parcel shipping volume to an all-time high. Consumers are more comfortable than ever buying from e-commerce vendors located overseas, while at the same time, retailers have adopted an omnichannel shipping strategy that has broadened the storage and shipment of inventory from centralized distribution centers to brick-andmortar stores and manufacturers, wherever they may be.

This has resulted in a flood of inbound packages that has taxed the resources of U.S. Customs and Border Protection (CBP), which has traditionally processed larger containers.

Putting a Strain on Customs

Today, 66% of businesses that sell online are already selling cross-border. These sales account for close to 31% of those businesses' revenue, according to the *Visa Global Merchant E-commerce Study*. Additionally, cross-border e-commerce is not about to slow down, with 66% of the businesses not currently selling internationally planning to do so soon.

This is bound to put a strain on the CBP, adding costs and time to international parcel deliveries, especially as more shipments are delivered from foreign manufacturers direct to consumers.

"You do ultimately have a lot more direct shipperto-manufacturer relationships. And there's a lot of middleman distribution that's being compressed out of that supply chain component," says Spencer Askew, CEO of multimodal TMS company Teknowlogi. "Today's shippers will use drop ship-tohome from manufacturers in America or overseas, where the shippers historically would have to be responsible for some kind of a distribution or hire a 3PL to sit in the middle."

To lessen the burden on CBP resources, the Trade Facilitation and Trade Enforcement Act of 2015 raised the de minimis value (the limit under which so-called "Section 321" shipments–aka parcels–are exempt from duties, taxes, and more detailed filing requirements) from \$200 to \$800. By raising the de minimis threshold, the impact has been anything but trivial and may have added momentum to the parcel volume surge.

The CBP is searching for a way to speed up the processes considering this growth of international parcels, and late last year, it took its first step toward that end.

Turning to Electronic Filing

Parcel customs clearance processes have been completely paper-based and manual to this point, except for a few global parcel carriers who can file electronically because they have customs brokerage service operations.

In Q4 2019, the CBP began testing an electronic filing process it believes will streamline clearance processes, while improving data collection, visibility, and border protection. When the piloting phase is complete, the process will enable global logistics companies to electronically file more detailed Section 321 information, eliminating manual and duplicate data entry and freeing up the flow of parcels through customs.

It is unclear what impact electronic filing will have on speed and costs for parcels having to clear customs daily. However, as e-commerce continues to increase globally, shippers will have to continue to navigate customs both in their home country and a growing number of others so their omnichannel strategy can deliver from the endless aisle. Having the right technology partner will be key in staying compliant and reducing costs.



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The Three Things You Can Teach Your Third-Party Logistics Provider



Robert Russo President & CEO Port Jersey Logistics sales@portjersey.com www.portjersey.com 800-355-1009

Just because your logistics provider is the subject-matter expert, it doesn't mean there isn't anything they can learn from you. ubject-matter experts. It's a phrase that you'll often hear mentioned by third-party logistics providers, and rightfully so. A quality logistics provider should be able to guide you through industry best practices and help you operate your business.

However, just because your logistics provider is the subject-matter expert, it doesn't mean there isn't anything they can learn from you. That's one of the reasons Port Jersey Logistics sends out a Client Satisfaction Survey every year-to see what we're missing and to see how we can improve. Through this process, we consistently receive valuable feedback that helps us continue to be a preferred service provider to our customers.

Based on the results from our survey, here are the three things that you can teach your logistics provider:

1. What you truly enjoy about your logistics provider.

Sometimes the basics matter most. Companies get caught up in KPIs, statistics, and reporting, but what's truly important for successful business relationships is much simpler than that–enjoying who you work with.

While this may seem obvious, it's also easy to forget when you're focusing on the bigger picture. Your logistics provider may not know what sets them apart from the pack, and they won't be able to further develop those qualities unless you tell them.

For example, the most commonly indicated positive aspect of Port Jersey Logistics and our operating companies is that our customers enjoy working with their primary contacts on a daily basis, so we launched an internal survey to build upon our company culture and ensure that our employees are delighted, just like our customers.

2. How you expect your logistics provider to grow.

Logistics companies should always be looking to evolve, and one of the best ways to determine

the direction they should take is by asking their customers. Their customers will likely have insight about trends in their specific industries that may require the logistics provider to enhance their service offerings.

Overall, one of the common goals across the logistics industry is to improve turnaround time. Many refer to it as the "Amazon Effect," where consumers, and now businesses, expect to receive products quicker, which will only increase over time.

3. What you need help understanding from your logistics provider.

Even though logistics providers are the subjectmatter experts, certain processes that occur behind the scenes may not be well communicated to customers.

This is a fast-moving industry with many steps throughout the process that impact your business in various ways. If there's something that you don't understand, your logistics provider is the perfect resource for answers to your questions. We do our best to continually communicate industry information and dive deeper in logistics processes through regular conference calls, quarterly business reviews, and informative emails.

Do you already express these points to your logistics provider? Do they listen? If not, here are some suggestions that may encourage them to listen:

- Schedule quarterly business reviews
- Grade them with an annual scorecard
- Coordinate strategic planning sessions
- Research other providers for comparison

If your logistics provider is not receptive to your feedback, you may need to consider finding someone who's a better fit for your business and who will take your feedback and look to partner with you.



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Scale to Meet Your Needs



Jake McLeod Chief Commercial Officer RPM jmcleod@rpmmoves.com RPMmoves.com 248-414-1816

Now more than ever before, shippers should consider working with an experienced managed transportation service provider that has a large, dedicated network of carrier partners. s the New Year's Eve ball drops, so do the stresses, frustrations, and worries weighing down on us throughout the year. Shortly after the kisses and hugs, we excitedly declare, "This year will be better than last year." Next we make our New Year's resolutions, to be healthier, to not take the small things for granted, to save more money, etc. But as February rolls around, it's evident we are merely creatures of habit.

If you're in logistics, you're already familiar with this cycle-the highs and lows of supply and demand. At the beginning of 2019 and with a solid 2018 in the rearview mirror, many trucking companies made "resolutions" to increase growth and profit. They bought more real estate for expansion, more trucks, and hired more drivers.

Yet, as one article in *Business Insider* stated, "Thousands of truck drivers lost their jobs in the 2019 trucking 'bloodbath." The article goes on to state, "It's not just small businesses that struggled. Major trucking companies consistently missed and revised their earnings targets this year." More than 600 trucking companies filed for bankruptcy.

Breaking the Cycle

So how do shippers and carriers protect themselves moving forward? Scalability.

2019 saw record growth across many markets, even with geopolitical factors, such as tariffs and border wars acting as deterrents. According to projections from SJ Consulting Group, Inc., e-commerce growth increased 20% in 2019, with no end in sight. A record 8.6 billion packages were delivered domestically. Sure enough, 2020 sees no slowdown.

Now more than ever before, shippers should consider working with an experienced managed transportation service provider that has a large, dedicated network of carrier partners and deep relationships with these partners. In this modern, competitive, and ever-changing market, it is more important than ever before for businesses to be hyperfocused on their core competencies and foster deep relationships.

Many MTS providers are moving toward better technology experiences, including automation. Yet automation is merely a tool, not a solution. When a problem arises, as one always does, working with an experienced person who understands holistically the needs of the shipper and the carrier will ensure the most successful results.

That being said, MTS providers must implement the very best cloud-based TMS for shippers, offering full transparency from planning to shipping to billing. According to nVision Global's article in FreightWaves.com, "Benefits of a cloud-based TMS include automation of the routing guide, management by exception, real-time insight, visibility into the ordering and shipment process, and improved communication with end customers."

Keeping Steady

Additionally, scalability can stabilize market volatility. Regardless of how fast business grows or slows, shippers can rest easy knowing that their MTS provider will meet demands and costs, and drivers can take comfort in knowing that they will have more dedicated work at fixed prices.

Capturing capacity and keeping drivers engaged, loaded, and quickly and fairly compensated is the only way to keep a captive network of trucks ready when the market takes a turn, whether it is a shortterm spike or a long-term shift. When operating at scale, it is on the MTS to create seamless communication among all the parties. Hopefully, when the ball drops in 2020, many more in the logistics industry will say, "I hope the New Year is as good as the last."



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Turning Fixed Logistics Costs Into Variable Costs via Outsourcing



Robert Kriewaldt Senior Vice President Phoenix Logistics Robert@Phoenix3PL.com www.phoenix3pl.com 920-915-9746

oo many fixed costs can sink any businessespecially newer businesses without a steady profit stream. Fixed costs refer to recurring costs such as rent, taxes, utilities, salaries, and other such necessities. Unlike fixed costs, variable costs fluctuate based on multiple factors, such as product volume or service usage.

In most cases, variable costs are preferred because they adjust proportionately to the peaks and valleys of the business. Variable costs offer an ideal way for many shippers to keep money in their proverbial pocket when things are slower without sacrificing service when orders pick up.

While some of these costs cannot be avoided, many can be converted to variable costs by enlisting a third-party logistics (3PL) provider. The following expenses can be made variable via outsourcing:

Real Estate

When sales underperform, it can be difficult to scale warehousing or fulfillment operations to match if a business directly owns or leases these facilities. The rent still has to be paid whether the storage space is full or not.

Through multi-tenant facilities, 3PLs can scale storage space based on your current demand. 3PLs can monetize unused space by leasing to other clients and expand your storage space during peak sales periods or in the face of unexpected demand. This convenience also extends to the additional utility costs associated with cold storage.

Material Handling Equipment

From forklifts to conveyors to indoor cranes, the upfront cost of material handling machinery can be intimidating for businesses of any size. New and functional equipment can often be out of reach entirely for small and medium shippers–especially those who don't maintain high sales volumes all year round.

A 3PL offsets this cost more easily because they can spread it across multiple clients. For a logistics

provider, material handling is an indirect cost rather than a direct one, so the impact on client rates is often minimal.

Software

The fixed cost of logistics software solutions can eat away at a direct owner's supply chain budget. Efficient operation often requires a variety of solutions, such as warehouse management systems, transportation management systems, yard management systems, electronic resource planning, and more.

3PLs roll these costs into their customer rates, often providing a substantial discount over what the shipper would pay for the solutions directly. Given the narrow margins faced by logistics providers, most have invested heavily in a full suite of supply chain solutions to drive efficiency in every area. Customers ultimately benefit from these investments at a much lower cost.

Labor

The supply chain sector faces a shortage in both skilled and unskilled labor, making it difficult for many shippers to maintain a reliable workforce. This shortage extends from the warehouse floor to the manager's office.

While reliable labor is perhaps one of the greatest benefits offered by 3PLs in general, turning labor into a variable cost offers a substantial positive impact on the bottom line. The 3PL handles human resources, insurance, and other benefits, all while scaling labor up or down based on demand for each client.

Reduce Your Fixed Costs With a 3PL

Through these services and many others, 3PLs offer a means for shippers to turn potentially crippling fixed costs into more manageable variable expenses. Reach out to your 3PL and ask how they can help you reduce the strain of fixed costs on your budget.

If you would like to learn how Phoenix Logistics can help you, please contact us today.

Variable costs offer an ideal way for many shippers to keep money in their proverbial pocket when things are slower without sacrificing service when orders pick up.

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5 Ways to Manage Warehousing Requirements During Peak Periods



Thomas Eldridge Campbell Chief Strategy Officer Capacity, LLC inboundlog@capacityllc.com 732-348-7224

anaging peak period shipment volume is a structural challenge in the U.S. economy. Those preoccupied with executing order fulfillment services spend much of the year thinking about and planning for it. The surge is a three- to four-month peak in first inbound, and then outbound shipments, with overlap. Shipments to retailers come first, followed by a huge spike in shipments directly to consumers. Industries such as toys can see as much as 80% or more of their sales in a very short time frame.

Warehouses can use a number of techniques to maintain service level agreements (SLAs)–the "guaranteed" turnaround time for an order to go out–during peak demand periods. These techniques include:

1. Manage laborers carefully. From Labor Day to Christmas Eve, ask employees to avoid vacation time, except in areas such as sales and finance. Make additional use of temporary labor, but rely more on additional shifts of previously trained workers. Feather in additional day shifts and night shifts as needed. Start well before peak season, in order to be ready when it comes. Shake out any issues with training or attendance before crunch time. Cross-train supervisors and other employees on different tasks, facilities, and shifts. Add flexibility and scalability wherever possible, but always at the lowest possible cost.

2. Incentivize staff. When smaller, rely on a core team. If needed, use overtime to help address the challenges of volume spikes, which routinely are between five and 10 times the norm and require additional hands on deck. Hourly workers are incented by the prospect of overtime pay, but the cost curve goes up more steeply than the productivity curve. The latter goes down as steeply, if not more so. Good service is highly correlated to happy, well-rested workers, and vice versa. Provide a career path for all

workers, whatever level they start at, and offer benefits and pay for performance along that path.

3. Set expectations. Plan with clients who have significant historical volume spikes, and be realistic about the ability to maintain SLAs during peak. That may mean running an extra day shift right after Black Friday, working the weekend, whatever it takes. Work Sunday afternoon shifts to address the weekly spike and accumulated volume of the extra online shopping days over the weekend. Get ready to attack the larger seasonal volume spikes, and even the smaller ones—it's like training for the really big ones.

4. Watch out for carrier issues. Ultimately, all supply chain systems are physical, and subject to physical constraints. The idea that parcel carriers can infinitely multiply their human and hard assets for 22 days of the year is not realistic; there will be a cap to the extra drivers, equipment, and sorting capabilities. This is experienced most acutely in ground service delays during those absolute peak days. Carriers can also get hurt if they over-staff and prepare for more volume than they get. All carriers are more incented to not over-staff and over-equip for the volumes because that negatively impacts profits.

5. Technology improves throughput. There is no denying that the move toward more sophisticated IT solutions can increase productivity dramatically. But that is impossible without disciplined, expert implementation. Many software implementations fail. Hardware is fickle. Be prepared and expert at troubleshooting, duct tape, spit, and vinegar.

The opportunity to manage a highly complex problem requires expert deployment of people, places and things to lead through challenging and demanding times. That process runs a lot more smoothly when there is a clear mission statement for a peak demand improvement program and a focused plan to roll it out.

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How 3PLs Can Minimize Claims and Help Customers Understand Liability



David Osorio Chief Operating Officer Over the Road Division GLT Logistics go@shipwithglt.com www.shipwithglt.com 786-206-1529

3PLs can become an ally for their customers in the event of a loss, damage, or delay, providing outstanding customer service and support during the claims process. hen customers partner with a 3PL, they are looking for more than just customer service. They seek expertise that cannot be replaced with technology and a proactive approach that boosts the efficiency of their processes and minimizes risks.

One of the main roadblocks in the relationship between intermediaries and customers is the lack of clarity about terms in the event of a loss, damage, or delay during the shipping process. Carriers and freight forwarders are responsible for handling the liability of shipping claims and any reimbursements.

This exemption does not mean that 3PL companies cannot be part of this process. On the contrary, 3PLs can become an ally for their customers, providing outstanding customer service and support for a smoother and easier claims process. This is why 3PL companies need to cultivate and invest in knowledge for their teams through specialized training programs that are customized to their needs, mitigate risks, prevent errors, and yield results.

Essential Aspects of Processing Claims Regularly follow up on the claim: Assertive

communication is vital. With a team designed to handle these processes, customers can be supported by an expert staff that will help minimize risks, losses, damages, and delays. This team will continually monitor the case and its progress until the carrier provides the outcome. The final response can take up to 120 days, but with efficient follow-up, the wait time can be significantly reduced.

Meet the "concealed freight damage claims" deadline: When damage or shortage is not immediately recognizable, and the loss is discovered after the delivery receipt is signed, the customer has 5 days to report the concealed damage to the carrier. An expert team aware of the guidelines and changes to the NMFC rules will help speed up the claim filing process and meet the deadlines to avoid the inability to report or the annulment of cases. Prepare a shipment avoiding unnecessary risks: When transporting goods, each process must generate and follow detailed documentation. These files provide a record of each load, including all transactions and instructions, to successfully reach the destination. This is critical in order to ensure the service fulfills the guidelines demanded by the customer.

For example, completing the box that says "value of these products" on the front page of the bill of lading helps avoid a total loss. If the value information is missing, the carrier will have the power to assume the release rate. A dedicated team will review the documentation and make sure that each item is designated correctly, therefore protecting the company from unnecessary risks that may arise from carelessness or negligence.

Cover the shipment with insurance: It is essential to determine the type of insurance that a shipment needs in order to be covered throughout the entire transportation process. To define the type of insurance required, a customer should consider the type of cargo being shipped, the type of service needed, and the liability of the carrier. By adding extra protection to the cargo and checking that the 3PL has a variety of insurances available such as Auto Liability Insurance and Primary Cargo Insurance, the customer will have peace of mind knowing their cargo is safe.

Logistics solutions experts can leverage the advantages of their expertise to create more specialized services. These services should not only focus on execution and delivery but also safeguard the best interests of a company and its people.

Customers will find support on quoting and dispatching as well as assistance with handling problems that may arise at any stage of the shipping and delivery process. This added value will strengthen business relationships, build trust, and foster long-term partnerships.



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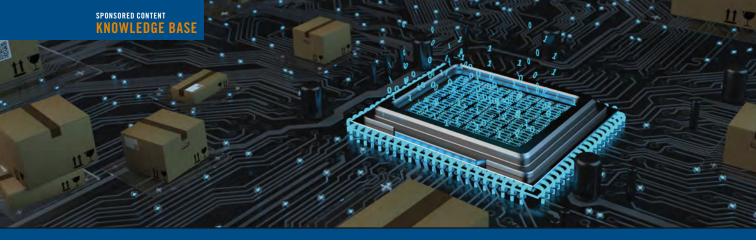
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Eliminating Extra Costs From Double, Triple Orders



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Multiple orders moving the same day to the same customer but on different bills of lading add up costs for shippers. The solution is to consolidate them. n today's fast-moving business world, there are many times when an order cannot be filled completely, which then requires a subsequent shipment. There is also a push among retailers and wholesalers to allow same-day shipments for orders placed just a few hours earlier.

The net result of all this has been a sharp rise in multiple orders moving the same day to the same customer but on different bills of lading. This can become very expensive.

A few examples would include:

- FedEx Priority 10/21-6552# Ontario to Salt Lake City \$825.92 Loss \$123.89
- FedEx Priority 10/21-7705# Ontario to Salt Lake City \$1,017.88 Loss \$152.68
- Four shipments via YRC from PA to CA 300#, 700#, 765#, 700# billed separately came to \$734. If consolidated onto one bill, savings would be \$108 (15%).

Another driving force in this development comes from a single company having more than one product line or business unit in the same building.

Here again, if a customer orders an item from one business unit and then one from another, the result also creates multiple bills of lading to the same customer the same day. Double the expense!

How do we fix this? It would be wonderful if companies had the ability to modify their behavior and do the consolidation on their doc, blending two or more bills of lading onto one "master bill of lading."

The carriers would then bill from this document even if several bills of lading are behind it. And the carriers used to permit you to create a masterbill the next day and some even offered to do that for you themselves. But those days are gone!

Today the only real solution is to operate a transportation management system that can receive all the orders each day and each hour and automatically consolidate them onto one bill of lading for the carrier. This works even if the carrier does an AM and PM pick up on the same day, since it is a paper marriage of freight and not a physical consolidation.

There are many such systems on the market today and we would suggest they be contacted to provide such consolidation. And for the record, we also have such a system available and would be happy to show its functionality and ability to interface with your ERP.

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LEANSUPPLYCHAIN

by Paul A. Myerson

Instructor, Management and Decision Sciences, Monmouth University and author of books on Lean and the Supply Chain for McGraw-Hill, Pearson, and Productivity Press pmyerson@monmouth.edu | 732-571-7523

Supply Chain AI: This Time It's for Real

Data analytics and artificial intelligence (AI) are hot topics these days, especially in supply chain circles.

Data analytics is the science of examining raw data to help draw conclusions about information. Predictive analytics uses data to foresee trends and patterns.

Artificial intelligence is a continuation of the concepts around predictive analytics, with one major difference: An AI system is able to make assumptions, and test and learn autonomously. Then it applies machine learning, deep learning, and other techniques to solve actual problems.

Artificial intelligence technology has been with us for a long time. What has changed recently is the power of computing, cloud-based service options, and the applicability of AI to supply chain and logistics.

AI AT WORK

In general, AI can be used in two ways. First, it can assist people in their day-to-day tasks, personally or commercially, without having complete control of the output. It can also reduce errors, for example, using a virtual assistant and in data analysis. Second, AI can help automate processes by functioning without the need for any human intervention—for example, robots performing process steps in a fulfillment center.

Using AI to assist people and automate processes helps the top and bottom line because companies waste a lot of time and money on having humans perform basic supply chain tasks.

Companies can significantly improve network, capacity, and demand-planning decisions with AI predictive capabilities using big data. Big data insights, along with AI, can improve supply chain transparency and optimization, and can potentially revolutionize the agility and efficiency of supply chain decision-making.

On a more tactical and operational level, companies are using AI in robotics and automated vehicles to track, locate, and move inventory within warehouses. While totally autonomous vehicles might not happen for a while, we already see technology such as assisted braking, lane-assist, and highway autopilot.

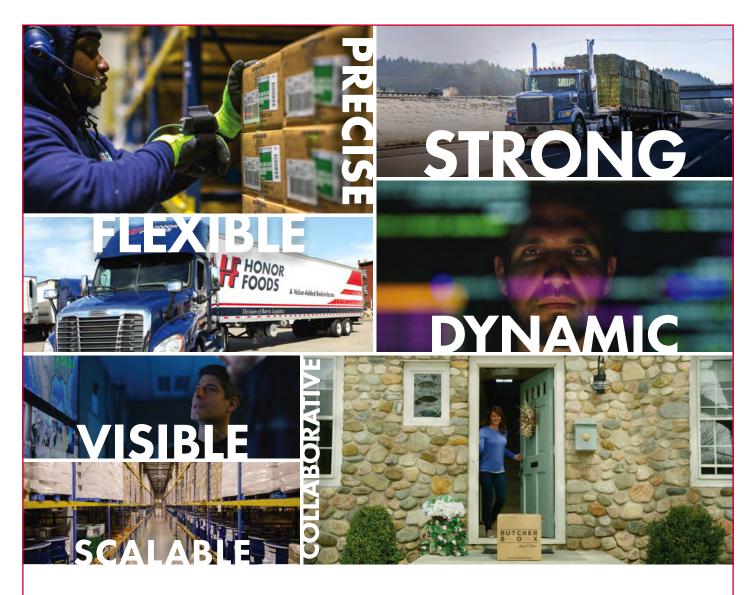
Streamlining procurementrelated tasks can happen through the automation and augmentation of chatbot capabilities, which require access to robust and intelligent data sets. This can allow for automating actions such as placing purchasing requests, researching and answering internal questions regarding procurement functionalities, or receiving, filing, and documenting invoices and payment/order requests.

IMPROVED CUSTOMER SERVICE

AI can also personalize relationships between logistics providers and customers. A logistics provider can now enable a customer to query Amazon's Alexa to track a shipment. If there is a problem with the shipment, Echo users can ask for assistance and be directed to the logistics company's customer assistance department.

Using predictive analytics for supplier selection and supplier relationship management with data generated from supplier assessments, audits, and credit scoring could provide a basis for decisions regarding supplier selection and risk management. The supplier relationship would be more predictive and intelligent.

There is no doubt that the potential of AI and machine learning will finally be achieved in the supply chain, enabling companies to eliminate waste, in many cases before it even occurs. Now that's real artificial intelligence.





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by Kyle Krug Director of Marketing & Communications, LEGACY Supply Chain Services kkrug@legacyscs.com | 775-336-2850

What to Look For In a 3PL

The field of third-party logistics (3PL) service providers has grown fiercely competitive, and the services and capabilities a 3PL can offer become difficult to differentiate.

Consider the following factors to identify a logistics provider that is part tactical service provider and part strategic business partner.

Does the logistics service provider's culture match my business' culture? Does the provider list its core values on its website? Hopefully. You want one that not only talks about their core values, but also proves that they can drive results by aligning these core values to successfully develop their own culture, which then drives value into client relationships.

Knowing that the 3PL you've contracted with has similar goals and values related to integrity, efficiency, leadership, and community consciousness is the first step toward a successful relationship. With labor costs accounting for around twothirds of the total cost of a distribution operation, the people are the biggest opportunity for success. A provider who values human capital over infrastructure will be a stronger partner to align with to drive value into a supply chain.

Does the logistics service provider have a good track record in customer service, accountability, and financial health? Research all logistics service providers for testimonials and ask for applicable references. Pay particular attention to whether they are capable of providing business solutions that solve for current and future business needs. And look for any recent awards or recognitions that prove that they are going above and beyond in their industry.

Is the logistics service provider familiar with my business? Familiarity with the region in which your business operates is vital, particularly when handling your transportation. A 3PL should know what's going on at the ports, on the roads, and at the borders. Make sure that any provider you consider has the expertise for accurate forecasting and risk mitigation.

Familiarity with your industry may be the most important box to check in your search for a trusted warehousing and distribution partner. A highvolume, highly seasonal, and volatile retail environment has different needs and nuances than industrial parts manufacturing. Knowing how to be proactive and resourceful within these environments is a key characteristic of a 3PL that is a fit for your business. Does the logistics service provider commit to technology? Having the platform is one thing—investing in the people to use it to drive value and scalability into a business's operation is another entirely. Not all businesses can allocate the capital needed to invest in top-of-the-line technology, nor can they invest in the expertise to use it—but those are now minimum requirements for a leading global logistics service provider.

Make sure your third-party logistics provider is equipped with the technology to forecast, plan, provide visibility, integrate, automate, and drive efficiency into your business.

Is the logistics service provider willing to invest in growing my business? A proactive 3PL will be interested in more than meeting your annual budgets, quotas, and KPIs. Today it's about aligning infrastructure including systems, people, real estate, and other assets—to help scale your business. It's about engineering better methods to continually increase efficiency. It's about integrating technology up and down the supply chain to streamline processes and prepare for unforeseen disruption.

Knowing what to look for in a 3PL is important. Your business relies on the dependability of any third-party service provider with whom you contract.



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Mitigating the Flood of Post-Holiday Returns

Businesses across the country spend months gearing up for the holiday season. And while they survived this year's frenzy, many are now bracing for a flood of post-holiday returns.

The return process can be challenging, and often requires customized, manual, and labor-intensive handling and sorting practices. If returns can be added back to salable inventory, they can still entail costly transportation to stores or fulfillment centers. Speed is critical in processing returns given seasonal products and other short shelf life SKUs quickly becoming obsolete. And issuing refunds early in the process can make or break the customer experience.

For the seller, some items such as bulk products or furniture don't make economic sense to return. Some items can't be resold or are too inconvenient to recoup costs, forcing businesses to consider packaging returns in bulk for resale, reimbursing customers without accepting the returned item, or in worst-case scenarios, sending products to landfills.

The good news? Innovative supplyside strategies can be used to develop solutions for a frictionless return process. It's the final experience a customer will have in the retail process, and it's critical. Here's what to consider when optimizing your returns process:

• Proximity to customers. Success increasingly depends on utilizing an optimized distribution network with multiple distribution centers, warehouses, or fulfillment locations in populous urban areas. Though rents for logistics space continued to climb in the past year, many find the cost worthwhile after considering all operating costs.

• Labor is one of the most costly and competitive elements in a supply chain. Since returns are unique and unpredictable, a high volume of labor with specialized training is required, and companies must ensure facilities have an adequate labor supply.

• Return channels. Evaluate your existing resources and plan accordingly. Some items may be best suited for a sorting facility, while others should be handled at a large distribution center or manufacturer. Some companies use third parties to efficiently process specialty returns such as electronics, even by leading retailers. Repackaging returns and reducing waste will also become a larger issue; one option is to process returns off site from core business operations, but in close proximity to existing facilities.

• Buy online, return in store. For businesses with an extensive retail footprint, streamlining in-store returns can be an efficient option that reduces transportation costs and draws in new and old customers. Some retailers, including Nordstrom, are beginning to accept returns from rivals like Macy's and Kohl's to reduce costs and increase convenience.

• Space sharing. Many businesses seek partnerships with traditional brick-andmortar retailers to expand their physical footprint. This year, UPS added 12,000 pickup locations in well-known brickand-mortar retailers for a total of 21,000 pickup points across the United States.

CUSTOMIZING THE APPROACH

A clear and efficient return process can differentiate businesses from competitors and reduce supply chain costs. While the businesses that planned ahead this year will likely end up on top, every business can learn from their post-holiday season and better optimize reverse logistics ahead of 2021.



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RISKS&REWARDS

by Michael Meeks Director of Risk Management, BlueGrace Logistics mmeeks@bluegracegroup.com | 800-697-4477

Stop, Thief! Five Ways to Protect Your Supply Chain

Today's supply chain ecosystem is increasingly complicated. We rely on suppliers and buyers across the globe and use multiple transport modes, languages, currencies, and laws across borders.

As a result, your company can be exposed to unpredictable theft at any time. Here are some simple tips to help protect your shipments, customers, and industry stature.

1. Know your vulnerabilities. Cargo sitting still is cargo at risk. Understand the locations and times of the day, week, and year when your cargo is most vulnerable. Be alert during earlymorning hours, when trucks and cargo are often left unattended, or when a driver is sleeping. Seaports, large industrial areas, production plants, manufacturing centers, electronics assembly lines, and pharmaceutical laboratories are all targets of thieves.

Food and beverage shipments are also highly targeted because they often lack any type of serial numbers or RFID tags hidden in packaging for tracking purposes. Precious metals are coveted by thieves who can make a quick resale transaction on the street.

2. Beef up security when thefts are more common. Monitor and avoid the risks associated with loads sitting

idle over the weekend. The chances of a theft occurring over a holiday weekend are substantially higher than typical weekends.

Halloween to New Year's Day is peak season for freight theft. The tight shipping schedules and possibly more relaxed security, along with increased shipments due to higher demand, are all contributing factors. Most cargo theft occurs within the first 150 to 200 miles of a shipment's origin, so tracking during this window is critical.

3. Know thieves' methods. Gone are the days of thugs using strong-arm tactics to carry out truck hijackings and break-ins. Today's thieves stake out and target facilities, and monitor shipping hours, shift changes, and the busiest times—processes reliant on white-collar criminals.

Often, imposters posing as a legitimate carrier will pick up a shipper's freight and hold it for ransom. Using the internet and company websites, it's simple for criminals to create fictitious bills of lading and shipping documents. 4. Create written procedures and follow them. Adopt best practices for security and a culture of risk management, from carrier selection to employee selection. Educate your employees and shipping partners on the theft trends and have plans in place to proactively avoid cargo theft.

Create a manual of standard operating procedures that every employee should read, understand, and follow in the event a theft occurs.

5. Know the best protection. Some of the best remedies are easy and inexpensive, such as alarms, locks, and simple, off-the-shelf GPS tracking devices inserted into pallets or driver cabs.

It's also important to adopt a company culture that emphasizes security and risk management. Vetting transportation partners, thoroughly selecting carriers, ensuring drivers are certified, and conducting employee background checks can have a cascading effect on the safety of your assets.

It's imperative that everyone within the organization—including employees and shipping partners—is educated on the risks of moving goods and understands best practices to proactively prevent cargo theft.

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TRADECOMPLIANCE

by Jeff Simpson Manager of Trade Policy, C.H. Robinson solutions@chrobinson.com | 855-229-6128

Incoterms 2020: Embracing the Rules

International Commercial Terms, commonly known as Incoterms[®], standardize the responsibilities of the buyer and seller in an international transaction and are now used frequently in domestic transactions in the United States.

Incoterms are used to allocate transport costs, show where risk passes from seller to buyer, and clearly define the responsibilities for export and customs clearance. They also identify who must purchase insurance if required—and at what level—from origin through destination.

When Incoterms are included in international agreements, why then do companies large and small still run into issues when importing or exporting?

Many companies are unfamiliar with Incoterms or don't understand them. Case in point: A small retailer in Seattle wanted to purchase three pallets of product from a mid-sized manufacturer in Paris. No one in the U.S. company spoke French while their Paris business partners knew only a bit of broken English. What could have been a large problem was quickly rectified by using Incoterms 2020 since it's available in 29 languages, including French.

"FCA Incoterms 2020 Paris, France" was added to the contract, and the deal was made, with responsibilities of both the seller and buyer clearly defined in their native language. Per the rule, the French manufacturer (seller) assumed the costs and risks through export clearance and onto the pre-carriage collecting vehicle. Then the U.S. retailer (buyer) took on the risk and responsibility for the freight through destination, including customs clearance in the United States. Through Incoterms, both buyer and seller understood their obligations in the transaction, which led to a favorable outcome.

UNDERSTAND THE EXPECTATIONS

But using an Incoterm rule in a sales contract without a complete understanding of what is expected from both parties can delay the transaction or cause worse problems.

Here's an example. A U.S. manufacturer wants to get into the Brazilian market. The sales department agrees to "DDP Incoterm 2020 São Paulo, Brazil" with its new business partner in São Paulo. Under this Incoterm rule, the U.S. manufacturer is the importer of record into Brazil, responsible for exporting from the United States and importing into Brazil, and paying all duty, taxes, and customs charges. Unfortunately, both parties agreed to an Incoterm that cannot be successfully executed. According to customs regulations in Brazil, this small U.S. manufacturer cannot be the importer of record. When the product arrives at the Port of São Paulo, Brazilian customs seizes the goods for inaccurate documentation.

These are just two examples of the many violations that occur when companies don't understand how to consistently and correctly use Incoterms in trade. While the rules can facilitate good trading practices, lack of knowledge in the meanings and responsibilities behind the rules is a concern.

When companies incorporate Incoterms 2020, it's vital their logistics, procurement, tax, finance, and sales teams understand the rationale behind the rules and what steps to take to ensure a successful product journey from seller to buyer.

Education and training can be successful methods for helping employees understand the intricacies of global trade. If your company uses Incoterms or plans to start with Incoterms 2020, make sure your employees understand the requirements of both buyer and seller in each of the 11 rules. When used correctly, these rules can help your business achieve optimum success in international trade.



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by Oren Zaslansky CEO, Flock Freight oren@flockfreight.com | 855-744-7585

Navigating Amazon's Move into Freight

Amazon's quiet but successful launch of a full-service freight brokerage has a number of implications for supply chain professionals—some obvious and some not so clear.

It appears Amazon is initially looking for further optimizations and efficiencies related to its last-mile business, which is the bogeyman of online-to-home orders. Additionally, the Amazon network is most efficient with parcels, so driving greater liquidity along those lines will yield better short- to mid-term results for the mothership.

Will the company continue to invest in brick and mortar in addition to its brokerage? Probably.

Amazon has been building out the largest third-party logistics provider in the world for some time now, so the move to brokerage shouldn't be a surprise. Parcel and full truckload will be where the company plays for some time.

But can Amazon Brokerage be a valued partner to supply chain professionals? Here are three things to think about to prepare for Amazon's next big move.

1. Vertical integration. Amazon optimizes for itself. Amazon's business focuses on expanding at all costs in an effort to gain data. The insights gleaned from its data go back into optimizing and tailoring the business for its own efficiency needs. This means Amazon is looking out only for itself and raises the question of how much it will prioritize customers' needs in this new space.

Start by asking your Amazon rep to explain how your shipments are going to move. Will your shipment be sent with a third-party carrier, or only with an Amazon-dedicated fleet? Does your shipment move hubless, or only through multiple distribution centers along the way? These types of questions will reveal what is at the forefront of Amazon's optimization strategy.

2. Advantages of spot market competition. People think there are new savings opportunities waiting for them since Amazon is willing to forego margin compared to traditional models. In the freight industry, however, this may not prove to be a competitive advantage. Smart brokers in this space operate off of the spot market, not on contract. For supply chain professionals, that means Amazon does not derive greater advantage in their model.

That's the challenge and beauty of a spot market—it's egalitarian, and everyone operates under the same set of rules. Whether it's a one-man brokerage working from home or an industry behemoth, everyone's got the same shot on goal. Assuming the above is a fact for Amazon (and everyone else), ask your Amazon sales rep what percentage of its freight is done via contracted rates versus the spot market. That will shed some light on Amazon's true pricing strategy.

3. New customers, new challenges. Amazon specializes in parcel and lastmile service. Can it handle a pallet-based economy? Moreover, can it succeed in the B2B marketplace when its customers are mid- and enterprise-level businesses that come to the table with their own requirements, demands, and needs?

What happens when inevitable channel conflict comes into play? Will enterprise businesses use Amazon to ship to Walmart and will Walmart accept this change willingly? There should be a lot of healthy skepticism around the inevitable channel conflicts awaiting Amazon down the line.

As you consider using Amazon to move freight, it is important to understand if it will be able to drive the same level of B2B expectations that freight shippers need. What is Amazon's process for shipment notifications, appointment setting, and delivery confirmations?

It comes down to this: Is Amazon looking to deliver you a better freight experience, or simply drive more volume through its own freight network?

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by Jay Fraze

Director of Supply Chain Management Services, Global Lifecycle Management, Tech Data Jay.fraze@techdata.com | 800-237-8931, x5683909

The Secret Behind the Best Supply Chain Transformations

Even the most well-oiled supply chains have room for improvement. But what if you want to do more than just improve; what if you want to transform? Data analytics and artificial intelligence (AI) can disrupt—and, yes, transform—your supply chain.

Here are the top three ways data analytics and AI can transform your supply chain.

1. Powerful predictions for informed decision-making. Predictive analytics can decrease costs, set you apart positively from your competitors, and help you better serve your customers.

The most impressive aspect of AI-enhanced supply chain management is how machine learning can reduce forecasting errors by up to 50%, according to McKinsey. For example, there is an industry-wide problem of lost sales due to a lack of available product when it's needed. McKinsey found that the use of machine-learning–based planning and optimization techniques can reduce these losses by up to 65%. This means companies can prepare for demand better—and become more profitable—than ever before.

2. Obstacle anticipation and misstep prevention. AI and machine learning can help your business avoid significant missteps. Consider this situation: Unforeseen weather causes a traffic delay and you have a fleet of trucks carrying important deliverables to one of your best customers. By tapping into AI, you can discover alternate routes your trucks can take, how much time and money these new routes may require, and how these changes may impact the rest of your supply chain.

IMPROVING PERFORMANCE

The supply chain is notorious for complex problems, often centering on constraints, costs, and deliveries. McKinsey predicts that machine learning's most important contributions will be in providing supply chain operators with more significant insights into how they can improve supply chain performance, thus anticipating anomalies in logistics costs and performance before they occur.

3. Enhance the customer experience. Using data analytics and AI in your supply chain management process can drastically improve your real-time visibility, which boosts your ability to proactively give customers what they want. Analyze large amounts of data and you'll find new opportunities for your company to create value for your customers. You'll also more easily identify any problems your customers might have, so you can continually adjust and meet their needs.

So how do you go about incorporating these powerful technologies and transforming your own business?

Start by evaluating your current talent capabilities. Hire a data analyst and/or data scientist who can help you navigate the implementation of these technologies and the path forward with them. Or, offer certification and training opportunities to your existing staff to help build these skills.

You can also partner with a supply chain management services provider who offers multiple models, such as the third-party logistics or hybrid operating model for total flexibility.

A transformation like this takes time and resources, but the benefits your business and customers will enjoy when all is said and done are revolutionary. Are you ready to dive in?

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LOGISTICSMGMT

by Ohad Axelrod Co-Founder and CEO, Fr8Hub ohad.axelrod@fr8hub.com | 877-537-8482

Tips for Shipping Across the Mexico Border

Does your business have the knowledge and resources to manage cross-border shipping effectively? Review these five critical questions to ask before booking your next load across the Mexico border.

1. Has my forwarding agency completed all the appropriate paperwork on time? Businesses shipping from Mexico to the United States, or vice versa, need a forwarding agency in each country to manage the importing process.

Depending on which country is importing the goods, the appropriate forwarding agency should complete all required paperwork, make payments, and finalize other requirements well before the shipment reaches the border. Without the right documentation, loads can be delayed by days at the border, creating costs for shippers and carriers.

2. Can I track my shipments along the entire journey? Visibility remains a struggle when moving freight between Mexico and the United States because it typically entails multiple handovers between carriers, which can create confusion and the potential for delays.

And once that freight crosses the border, language barriers, cell phone incompatibilities, and other issues often cause it to fall into a black hole, leaving businesses uncertain if their goods are secure and on track to meet delivery requirements. Cargo robberies have also risen by double digits in Mexico in recent years. To mitigate risk, seek out partners who offer the capabilities to stay in close contact with carriers.

3. Do I know if my freight is being transloaded or traveling directly? Say you move freight from Detroit to Mexico City. Depending on the carrier, your vehicles could either remain on the same trailer with the same driver for the entire journey (direct with a B1 driver), remain in the same trailer the entire way but switch drivers (direct), or be unloaded at the border and reloaded with a new driver and equipment (transloaded). The problem is, many shippers don't know the difference between these methods and many carriers aren't likely to tell you.

While shipping direct with a B1 driver can improve efficiency and security, it's typically more expensive than other methods. When booking a load, ask the carrier how it plans to handle the freight and how pricing differs for various methods. A trustworthy carrier will know the difference and be willing to explain exactly what will happen to your freight.

4. Is my carrier C-TPAT certified? Established after 9/11, C-TPAT certification is designed to ensure all cargo entering the United States is secure. While getting certified involves substantial paperwork for carriers, those that receive the certification can typically move through border crossings much more efficiently. Verify whether your carriers are C-TPAT certified to avoid delays and complications.

Also check their safety records, licenses, and references. Tracking down this information for Mexican carriers can be difficult, so seek out a partner that can help manage carrier vetting and screening for your loads.

5. Do my products have specific shipping needs? Shipping valuable products such as pharmaceuticals and electronics is typically expensive and complex. Shipments usually require an armed guard, carriers need hefty insurance policies, and C-TPAT certification is non-negotiable. These requirements can narrow the field of qualified carriers considerably, especially for specific routes or time-sensitive deliveries.

When planning your loads, consider product-specific requirements and how you'll source the right carriers. In particular, loads often aren't insured for the portion of the journey in Mexico, so verify this and pay for additional insurance if needed. A partner with a wide carrier network can help you source capacity based on your specific needs.

Transportation procurement strategy checklist

A solid freight procurement strategy always comes down to *three rights*: **the right rates, the right schedules and the right amount of allocation**. Here are some elements to consider when configuring your ultimate freight procurement strategy:



Evaluate your RFQ frequency

Timing is crucial during your RFQ, from issue through negotiation and signature. If you begin your RFQ process at a time when the carrier's outlook for the year is optimistic, you won't get the best deal. So take control, issue RFQs more frequently, and evaluate spot rates from time to time.



Make use of hard data to negotiate with carriers

Being able to predict more accurately, by using granular data rather than per-annum forecasts, means you can negotiate more easily and effectively. Talk to each separate department and insist that every planner understands the peaks and troughs in your cycle.



Drive better rates from your carriers with a customized RFQ structure

An effective RFQ structure can help set the tone and assert to your carriers that you are in control of the process. This obliges them to bid more competitively for your business.



Use technology to streamline your RFQ process

Copying and pasting Excel files introduces the potential of human error. Look for technology platforms that automate processes, helping you to:

- » Launch bids
- » Consolidate submissions
- » Analyze allocations
- » Communicate with your carriers



Benchmark rates

The only way to really know if you are paying above or below market rates for your freight is to access benchmark rates from freight procurement experts.



Check out a carrier database to find additional carriers

If you procure services from fewer than five carriers, re-evaluate whether you're casting your net wide enough. You may not be making the best buying decisions for your organization. Do a quick search on the Ticontract carrier database of more than 35,000 unique carriers to see what you might be missing.



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by Michelle Comerford

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Inland Ports: An Efficient Alternative

Coastal seaports remain pivotal components of many supply chains. Yet, for U.S. manufacturers and distributors scouting new locations, nearby real estate options are pricey, scarce, and/or stuck in a web of congested roadways. One viable solution is inland ports intermodal terminals directly connected to seaports by rail or road.

A strategy for many firms considering new manufacturing investment likely includes importing raw materials and parts and/or exporting finished products. As such, locations near the East Coast and West Coast are often top of mind going into the site selection process.

The challenge with these seaport locations is that land is scarce and/or expensive. In addition, heavy volume on the roadways can be inefficient for distribution.

Conversely, an inland or "dry" port operates as an inland distribution point from the sea to an inland destination. These ports typically include warehouse space for storage and consolidation of goods, as well as customs clearance services. This allows for a streamlined importing process where containers are offloaded at the port and sent inland via rail, which can be especially useful for products destined for inland customers.

A prime example is the operation in Greer, South Carolina, where a Norfolk Southern rail line connects to the Port of Charleston. Containers received at the port in Charleston in the morning are transferred directly to the rail line and received in Greer the next morning.

BMW is one of the largest utilizers of nearby Inland Port Greer. The inland port has allowed the company to expand production at its Spartanburg, South Carolina, plant—through next-day service to and from the Port of Charleston.

AVOIDING CONGESTION

Inland ports can improve the movement of imports and exports, shifting time-consuming sorting and handling farther inland, away from congested seaports.

That is precisely the goal of the new DeWitt Inland Port, being constructed outside of Syracuse, which will connect upstate New York to the Port of New York and New Jersey via a CSX rail line. Moving this cargo via rail instead of truck will decrease the number of large trucks on interstate highways in the area.

Inland ports also offer cost benefits. Sending exports to the ports via rail should be significantly cheaper than via truck, say state officials with the DeWitt Inland Port project. They estimate the savings to be \$500 per container. This cost will vary in each part of the country, depending on location and distance to the seaport.

Inland port options are not only available from East Coast ports, but the west as well. Examples include: Logistics Park Kansas City in Edgerton, Kansas, which connects to the Southern California ports via BNSF Railway and the Inland Port Arizona in Coolidge, Arizona, which connects to the Southern California ports via a Union Pacific rail line.

Although currently experiencing some opposition, Salt Lake City is also considering a new inland port as part of a 1,600-acre development just outside of the city, an effort that would also connect with the Southern California ports.

A VIABLE OPTION

For companies considering new manufacturing and/or distribution operations in the United States, inland ports can prove beneficial. Inland ports can open new location options, which help meet other operating needs (e.g., access to desired labor pool, lower cost area, and/or more effective distribution channels).

These ports also help connect the inland United States with more global markets, boosting local, state, and regional economies.

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SMARTMOVES

by Tony Sinton CEO, Netstock tony@netstock.co | +27 83 650 9321

Preparing for the New World of Work

The first, second, and third industrial revolutions were built around some form of energy: The first was fueled by steam, the second by electricity, and the third by nuclear power. Enter the Fourth Industrial Revolution, powered by smart, autonomous systems that use data and machine learning as their fuel.

Requirements for different skill sets are becoming more prevalent. Job functions are starting to look a lot different as more companies begin to adopt new technologies such as robots, cobots, artificial intelligence, and big data into their supply chains.

Today's workplace faces significant disruption and begs the question: What should businesses be doing to embrace these changes? Companies need to stay people-centric by envisioning what their business will look like in a future automated world. See which functions computers can't do and how the workforce can integrate as opposed to being replaced by new technologies.

Specific jobs no doubt will be replaced because robotics and automation can perform many mundane work functions. Instead, look at roles that you can improve or augment rather than replace. Consider, for example, implementing RFID tags on your inventory items. The job function of scanning the items will still exist, but efficiency and visibility will improve through the advanced line of sight and read rates available in RFID technology. The business benefit is significant without any impact on the worker's job.

Augmented reality (AR) technology can also improve your pickers' efficiency. AR enables them to visualize exactly where a product is in the warehouse, saving time. AR used for staff training can dramatically reduce costs as staff can log in from anywhere in the world and learn how to operate heavy machinery or robotic tools. No more expensive flights, accommodations, and training room costs. These are examples of how you can integrate technology in your workplace without losing your human capital.

THE FUTURE IS IN DATA

Since data is the key driver in the Fourth Industrial Revolution, data scientists and analysts will be in massive demand, as will robotic and technology experts. Cybersecurity specialists are and will be in high demand. Internet of Things devices and sensors come with incredible risk, so securing your supply chain from cyberterrorism will be a necessity. Current roles are also evolving. The buyer of yesterday was skilled in transaction processing, while the buyer of tomorrow needs to understand commodity markets and have strong negotiation skills.

Freeing up time spent on mundane tasks will allow your staff to focus on more essential projects such as exploring new opportunities and building relationships with customers, suppliers, and other stakeholders. Technology is unlikely to replace soft skills because robots can't show empathy, nor do they possess a moral compass (yet). Jobs related to building relationships are increasingly critical to a successful business and will always be in demand.

With all this in mind, encourage your employees to be flexible and to adapt their skill set to include soft skills such as relationship building and problem solving. Encourage them to embrace the changes coming their way and show them how they will fit into the broader business.

Ensure employees understand that the "future of work" is not a robot apocalypse but an era of human-to-machine collaboration. Companies need to look at how the future of their workforce and the future of their technologies align. Stay flexible in your approach and continue to evaluate priorities and tactics to evolve your future business and workforce structures effectively.



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CARRIERSCORNER

by Christoph Seitz Co-Owner, CFR Rinkens info@cfrrinkens.com | 310-223-0474

Transporting Cars: RoRo or Containers?

The automotive supply chain is global and complex. The integration of smart solutions such as containerization maximizes the safety of the product, no matter how far it will travel to the final destination. Using containerization in place of traditional roll-on roll-off, or RoRo, transportation offers many advantages to the driver, the automotive supplier, and the consumer.

The advantages of containerization lead to lower transport costs. The container is its own warehouse, protecting the cargo it contains. This implies simpler and less expensive packaging for containerized cargoes, particularly consumer goods.

The stacking capacity on ships, trains (double stacking), and on the ground (container yards) is another advantage of containers.

WHY CONTAINERS?

Here are several other benefits of transporting cars in containers.

More options, more flexibility. Other types of transport, such as RoRo, have no choice but to follow fixed, often indirect routes. They must also travel slowly, and ports with RoRo terminals may be few and far between. This, in turn, necessitates more transfers by rail or road to perform the journey.

Container ships sail more frequently and are apt to have both larger freight capacity and quicker transit times. Port turnaround times with containers can be as quick as one day in some cases.

In terms of rail transportation, the level of space must certainly be optimized wherever possible to reduce costs. Containers maximize space while reducing costs to make certain that rail transportation rates can remain competitive. Choosing containers to move your vehicles means greater flexibility; you can pack unused space with other items.

Less chance of theft. Regardless of what sort of vehicle you ship, containers are a smart choice for secure transport. A container can only be opened by three individuals: the vendor, a customs employee, or the buyer.

Also, a container's contents cannot be seen from the outside, and carriers are not aware of what's inside. These combined security features allow for some welcome peace of mind compared to other methods. Less damage. All containers must stick to strict safety regulations with regard to structural integrity. A container fit for shipping is promised to be water and airtight, so as to protect your cars from rain, hail, dust, sun, tree sap, bird waste, and temperature extremes.

A car being loaded into a container must be carefully positioned before putting wheel chocks in place. After being properly chocked, the wheels are lashed into the container to make sure there will be no movement while in transit, ensuring a low possibility of damage. This isn't possible with older methods.

No inventory to store. Containerization prevents the expensive and resourcewasting practice of storing inventory. Instead, vehicles can be reliably loaded exactly as they need to be before being transported and delivered to the customer on time.

When containers with cars are stacked, the price to store them is far lower than a multistory building. Despite the incredible costs of doing so, manufacturers still build multistory car parks for their inventory. Stacking containers requires virtually no infrastructure or investment.

Containers are not only cost-effective and less risky to your cars, but they are also standard transport product, which means they can be loaded, transported, and unloaded around the globe.





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GREENLANDSCAPE

by Graham Deane Chief Operating Officer and Co-Founder, UrbanVolt graham@urbanvolt.com |+353-873618479

Saving Green While Going Green

Commercial operators around the globe—not just those in the supply chain—are currently grappling with a new reality. Gone are the days when businesses could solely worry about dollars and cents; now business leaders need to consider the environment and how their business is impacting it.

The increasing influence of climate change has significantly changed how customers assess the merits of businesses—they want to see environmental credentials before making the decision whether to purchase products, award a tender, or start a partnership.

SMART SOLUTIONS

But how can business leaders in the supply chain space accomplish these goals while also operating just-intime work practices and maintaining profit margins? It doesn't seem easy. Altering a business to go green is expensive, right?

Not necessarily.

If businesses are smart, they can go green while actually saving money. Here's how.

• As a service model making a difference. Up to this point, businesses looking to go green have had to spend a huge amount of money purchasing essential equipment such as specialized lighting and alternative energy sources. Now, energy and sustainability in general can be delivered as a service.

Take lighting, for example. After all, every building needs it, and every business working in the supply chain needs buildings.

The pioneering Light as a Service model means businesses can access energy-efficient light-emitting diode (LED) lighting by subscription—the lighting is maintained for them by the provider so they don't have to buy a depreciating asset or take on any financial risk, all the while saving up to 80% on energy bills.

This can have a huge effect for the marketing department. Clients and customers love to hear about good environmental news stories, and this innovative approach has a demonstrable—and measurable—effect on carbon emissions.

• Lighting is just one part of the energy puzzle. After driving energyefficiency under your own roof, renewable technologies can help meet your business's additional energy needs. In the 21st century, lighting is not enough and industrial operators should be looking to come off the grid entirely. Becoming self-sustainable is a process that starts with lighting. Later it makes sense for your business to investigate and examine other alternative energy sources, such as solar power.

The good news is that businesses can make those decisions at the touch of a button. Advances in technology mean overall energy usage is easily accessed, which means bottom-line savings are also instantly accessible.

For example, industry app Dataful can quickly measure how much a facility has to pay to light a building using just four simple metrics.

• Best of both worlds. Up to now, business leaders have understandably been cautious about what going green would mean for them and their bank balance.

But the good news is that with new technologies and ways of working—and operators providing historically expensive services for hugely discounted rates using new business models—you can get the best of both worlds: a healthier balance sheet and the ability to say that your business is making a real difference. It's a win-win for you, your clients, and your customers.

Saving money as well as the environment makes sense, doesn't it?









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GLOBALLOGISTICS

by Bernhard Simon CEO, Dachser natalia.Olawella@dachser.com | 954-524-0264

Can the New Silk Road Compete with the Maritime Silk Road?

The more I hear and read about the New Silk Road, the more grand the expectations. Politically, the trade corridors between China and Europe, as well as Africa, seem to be China's key to becoming a leading global power in the 21st century. Logistically, infrastructures and networks are emerging on an entirely new scale, taking a gigantic economic area—representing 60% of the world's population and 35% of the global economy—to the next level. The New Silk Road could act as a high-speed internet for transporting goods.

As with most narratives, it is worth taking a critical look at the facts pertaining to certain logistical aspects of the Belt and Road Initiative (BRI), as the New Silk Road is officially known.

First, consider the overland connection between China and Europe: the possibility of bringing Chinese consumer goods to the United States on the east-west route via rail. This transcontinental route was not the brainchild of China's President Xi Jinping, who made the BRI a national doctrine in 2013.

In fact, goods have been rolling along the Trans-Siberian route from China to Europe since 1973 (with some interruptions due to the Cold War). Today, there are two routes out of Northern China, which head via Mongolia, Kazakhstan, and Russia to terminal stations such as Duisburg's Inner Harbor or Hamburg.

China's western region, home to the megacity of Chongqing and its 30 million people, is also connected to the northern routes. Using this route, cargo from the west no longer needs to be transported the many miles to China's coasts.

HIGH COSTS OF RAIL FREIGHT VERSUS OCEAN FREIGHT

How significant are these rail links for logistics between Asia and Europe? In 2017, 2,400 trains moved about 145,000 standard containers between China and Central Europe. This corresponds roughly to the cargo of seven large container ships. The International Union of Railways expects this to grow to 670,000 standard containers—equivalent to 33 container ships—in 10 years.

Despite this forecast growth, the existing rail links between China and Europe are likely to remain logistical mini-niches. "Compared to sea freight, the volume of goods transported to Europe overland will always remain small," says Steve Saxon, a logistics expert from McKinsey in Shanghai.

This is primarily a matter of cost. Transporting a standard container between Shanghai and Duisburg by rail costs between US\$4,500 and US\$6,700; compare that to the cost of sending a similar container from Shanghai to Hamburg by ship—currently around US\$1,700.

This difference is simply too great for railway transport to be truly competitive against ocean transport, even though cargo moves at about twice the speed. Efficiency improvements will not have a big enough impact to shift from ocean transport to rail.

Another factor is that, at the moment, China heavily subsidizes these international rail connections. Once that support ends in 2021, competitiveness

will erode further. It is not clear whether rail transport will be self-sustaining without subsidies.

Also, in most cases, anyone needing a shipment quickly and flexibly typically sends it via air freight, even if this option costs around 80% more than shipping via railway. Thus, freight transport by rail is, and will remain, caught between economic (ocean) and fast (air).

WOULD MORE TRAIN ROUTES CHANGE THE SITUATION?

China is planning an additional railway line in its southern region, which will move cargo to Europe via Central Asian countries, as well as Iran and Turkey, bypassing Russia entirely.

Indeed, a railway line has connected China with Iran since 2018. This route is geographically similar to the "old" Silk Road, a trade route for camel caravans that crossed Central Asia on their way to the eastern Mediterranean.

If this railway line is completed one day, it will raise a number of questions from a European perspective:

• How can safety, punctuality, and reliability be guaranteed?

• How can delays caused by customs clearance be minimized?

• What effect will international sanctions have, for example, on transit through Iran?

• How can the misuse of containers for smuggling immigrants be avoided?

The bottom line is many issues need to be addressed before a railway corridor south of Russia can be established.

There are two more routes in China's BRI strategy. One is in Southeast Asia: a 2,400-mile railway line from Kunming to Singapore plus a branch to Calcutta. The other is a rail line that starts in China's far west, then runs through Pakistan to the port of Gwadar on the Arabian Sea. Crossing over various passes in Central Asia, this technically challenging project is expected to cost US\$62 billion. However, both routes have only an indirect connection to freight traffic between China and Europe.

So the situation will remain much the same into the future—some 90% of world trade will go by ship. Rail transport via the New Silk Road will not change this. If all this freight suddenly started rolling along the Silk Road, the route would be like an endless conveyor belt loop—the idea is absurd.

WHAT ABOUT THE MARITIME SILK ROAD?

More important than Eurasian railway routes is the so-called Maritime Silk Road, i.e., the transport of cargo from China to Europe by sea. As soon as Portuguese sailors opened up China for trade by sea in 1514, the old Silk Road began to fade from memory.

Today, more than 50% of global trade takes place on the Maritime Silk Road between China/East Asia and Europe. The world's largest container ports are on this route: Shanghai, Singapore, Shenzhen, Ningbo-Zhoushan, Busan, and Hong Kong. The development of the Maritime Silk Road needed no Chinese master plan; logistics infrastructure arises wherever corresponding investments pay off.

China has numerous plans for these established shipping routes, including port expansions. Its shareholdings in around 80 port companies—including Piraeus and more recently Genoa and Trieste—support its plans and ensure investments.

Why should we take issue with China for pursuing these goals leveraging its position as a leading global economic power? It is not the first country to promote its economic interests with direct investments and financing. Europe, too, should pursue a strategy of developing an enhanced infrastructure to transport freight to and from China/Southeast Asia to ensure a reciprocal exchange.

And China's plan to step up use of the maritime corridor through the Suez Canal, which shortens transport between China and Central Europe by at least four days compared to the route around Africa, is reasonable and less complicated. Ferdinand de Lesseps completed the Suez Canal in 1869 with precisely this goal in mind.

A DOSE OF REALITY

Nobody denies that the diverse projects of the New Silk Road hold great economic potential; that they would improve the network of connections between Asia and Europe; and that Beijing has a geopolitical interest in pursuing them. China is creating an enhanced infrastructure that will benefit all participants in the global economy.

Nevertheless, it is advisable to evaluate the logistical opportunities with the necessary dose of reality. I would caution against being dazzled by the beautiful visions and the fascinating narrative, as it could cloud your vision and lead to using poor judgment and making risky investments.

Supply Chain Challenge?



The Show Must Go On

Leaning on 30 years of experience shipping in Mexico, CFI delivered concert equipment for a well-known pop music group tour in North America.

THE CHALLENGE

For an international arena tour, the logistics of moving large amounts of gear and music equipment presents unique challenges. This is why the leading provider of live-event freight forwarding and logistics services, Rock-it Cargo USA, LLC, turns to CFI to deliver equipment for concerts in the United States and Mexico for their award-winning internationally touring band clients.

CFI is the perfect combination of capacity, experience, and dedication. Given the unique security and capacity needs associated with shipping into Mexico combined with the timesensitive nature of concert tours, the production crews need experienced partners they can trust to deliver safely, within budget, and on time.

THE SOLUTION

Through partnerships with previous concert moves and as the premier choice for Mexico truckload linehaul, CFI was approached by Rock-it Cargo to facilitate the moves across multiple locations for a series of concert dates in both the United



States and Mexico. This required careful coordination by CFI's driver planners across the country to ensure capacity would be available and deadhead would be minimized to provide additional value for the customer.

In a recent project CFI picked up 14 trailers of gear and equipment in Las Vegas, Nevada, plus an additional four trailers in Hollywood, California. These trailers were moved to Monterrey, Mexico, for the first shows in the Mexican tour, then on to Mexico City, and finally to Guadalajara. The trucks were diligently monitored as tractors and trailers were supported by security teams to each venue through arrival.

After the final concert date in Mexico, CFI moved the 18 trailers to the United States for the continuation of the tour.

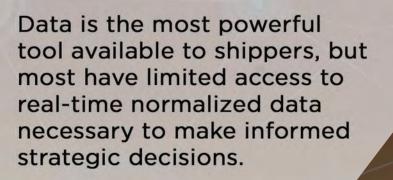






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Supply Chain Challenge?



Conquering Overflow Leads to a Long-Term Partnership

When a global medical device manufacturer turned to Suddath to manage overflow product, it found a long-term partner that also provided warehousing and value-added services.

THE CHALLENGE

One of the world's largest medical device manufacturers needed fullpallet storage of finished goods to manage overflow quarantine product.

The company had outgrown their distribution center and needed an overflow solution quickly, but also one that could grow and be effective for the long term. After partnering with Suddath[®], the client's needs grew and they also required an efficient thirdparty logistics operation. To assist in this endeavor, Suddath began coordinating warehousing and value-added services

warehousing and value-added services such as case picking orders for the client's customers.

THE SOLUTION

After building trust in the partnership, Suddath was given the opportunity to manage the entire inventory of quarantine product.

This complex process included receiving quarantine finished goods directly from the client's manufacturing lines, storing the quarantine product, and identifying and pulling samples of the quarantine product for the company's quality assurance (QA) group for evaluation. After a thorough evaluation, the logistics team would release the



quarantine product as directed by the QA group.

Suddath was also tasked with operating the manufacturer's on-site raw materials warehouse by leveraging the use of a dedicated on-site team.

Because of this successful operation, the client wanted to expand the partnership in a way that would help them to more efficiently realize their daily production goals. Suddath's team set up a lineside delivery operation to deliver raw materials directly to the pointof-use area within the client's primary manufacturing lines to support the company's busy production schedule.

Suddath now works directly with the procurement, planning, and scheduling departments to deliver the right material at the right time.

THE RESULTS

The partnership between Suddath and the client grew from a single service opportunity into a successful, multifaceted, decade-long relationship.

Suddath now operates a dedicated on-site warehouses and two off-site warehouses that integrate a top-of-theline shredder for materials/ packaging destruction of raw warehouse materials. Suddath processes approximately 85 tons of materials per month.

Two labeling machines were also installed at its off-site distribution center to manage the labeling of finished goods for the client's Latin and Central American customers.

Suddath's support with the labeling operation has increased multipacks per month by 114% in two years. This success has led to more volume with plans to expand to additional countries.



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Supply Chain Challenge?



Getting Crafty with Supply Chain Solutions

Verst Logistics helped an arts and crafts supplies company address peak season challenges and growing sales by expanding its supply chain capabilities.

THE CHALLENGE

A high-growth arts and crafts supplies company decided it had to pursue a new path to improve its limited supply chain capabilities. Sales growth during the fourth quarter peak period had created challenges in getting orders processed accurately and on time. While growing sales is a very good thing, the problems that resulted were significant, impacting customer satisfaction and lowering fill rates. Additionally, forecasting in a highgrowth business was difficult, and staffing for a peak season that lasts only a few days was nearly impossible. Shipping out of a single distribution point in California to reach East Coast customers added to the problems. As peak hit, the management team had to work side-byside with their 3PL's employees picking, packing, and shipping orders to keep up with volumes.

THE SOLUTION

The company began its search for a partner to execute its supply chain and improve customer satisfaction. The search led the company to Verst. Verst created a plan to utilize its 396,000-square-foot fulfillment facility located in a key Midwest logistics corridor. Additionally, Verst partnered with Locus Robotics, a leader in state-ofthe-art robotic technologies, to address peak season challenges by incorporating computer-guided bots for picking and packing speed and accuracy.

Now Verst fills orders for all geography east of the Mississippi, including a portion of product volume shipping direct to retailers, while following strict order compliance. The Verst solution handles more than 99% of all orders on time. At the height of the holiday peak, more than 100,000 units were picked and packed in one 24-hour period, with 90,000 units being confirmed and shipped out the same day.

The arts and crafts company now has a solution for reaching its direct and indirect customers that can grow with its business and operate smoothly throughout the entire year.





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Supply Chain Challenge?



Holman Logistics Uses Artificial Intelligence to Increase Forklift Safety

Holman partners with OneTrack to bring AI solutions to the issue of forklift accidents.

THE CHALLENGE

For Holman Logistics, nothing is more important than the safety of its team members and the customers for whom they provide manufacturing logistics, warehousing, and transportation services.

"Our core values set the foundation for the work we do, and we have no more important core value than safety. We constantly seek technology, training, and other innovative resources to help us maintain our superior safety performance," commented Brien Downie, president of Holman Logistics.

Holman operates forklifts in all its locations across the United States, and operations managers and customers understand the human and financial costs of forklift-related accidents. Holman currently monitors and tracks forklift activity; however, management wanted to understand the root causes of mishaps and find out if it was possible to create a system to warn of problems and prevent accidents from occurring.

THE SOLUTION

Along with ensuring that it hires, trains, and develops technically proficient forklift drivers, Holman chose to partner with OneTrack to leverage that company's expertise in Computer Vision and Deep Learning, also known as Artificial Intelligence (AI).

Computer Vision refers to software processing images from an onboard camera. While the concept of Computer Vision has been around for a long time,



recent advancements in Deep Learning allow computers to detect, recognize, and predict high-level concepts from images with superhuman accuracy and reliability.

A system powered by Deep Learning has the ability not only to detect that an incident occurred, but also to learn why that incident occurred. Most importantly, it can recognize the same pattern in the future and provide a real-time warning when it thinks a similar incident is about to happen. Such a system continues to learn while deployed, actively preventing incidents and continuously getting better at doing so. As the system learns, drivers become safer and more effective, and the number of accidents can be reduced over time.

These technologies create a safer, more efficient workplace for everyone, which is important for Holman because processes, requirements, and workflows can vary greatly by customer and location across its network of facilities.

Brien Downie concluded, "I am confident that these AI tools, along with our never-ending safety focus, will help us achieve our goal of accidentfree operations. AI technology is already having a positive impact on the safety performance of the entire industry."



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Supply Chain Challenge?



Importer Maximizes Savings and Customer Service with Kuebix TMS

By leveraging Kuebix and an integration with NetSuite, equipment parts importer Summit Supply ensures every order is shipped with the quickest, least expensive option to optimize savings and service.

THE CHALLENGE

Summit Supply is a family owned and operated direct importer of high-quality rubber tracks, undercarriage wear parts, rubber track pads, and flatproof solid tires for equipment. They ship all over the United States from six warehouses located in New Jersey, Washington, Georgia, Illinois, Texas, and California.

Since opening their doors in 1982, Summit Supply has placed a heavy emphasis on fast delivery and availability of their products and has the largest in-stock inventory in North America.

Summit Supply's company mission is to be a "Team-Driven, Customer-Focused organization that strives to deliver quality products in a timely manner, at a fair price, with unmatched customer service." To achieve this mission, Summit Supply works to continuously improve its logistics operations.

THE SOLUTION

In 2017, Summit Supply learned about Kuebix TMS from a trusted advisor in the industry. They immediately realized how much time they could save by leveraging Kuebix's side-by-side rate comparison functionality instead of navigating between carrier websites.

Summit Supply began as a Kuebix Business Pro account with multiple user seats. They immediately began seeing the benefits of the system, including time



savings and reduced freight spend. With Kuebix, Summit Supply ensures that every order is shipped with the quickest, least expensive option to maximize savings and service.

After their first year, Summit Supply decided to expand their use of Kuebix by connecting their ERP functionality with Kuebix TMS through an integration with NetSuite.

An ERP integration serves to automatically populate order information into Kuebix from NetSuite. This means that Summit Supply never needs to rekey line items and they always achieve 100% order accuracy by avoiding human error. After making the decision to integrate their ERP with Kuebix in 2018, Summit Supply was up and running with their integration in about eight weeks.

According to Cory Storr, a client care specialist who uses Kuebix daily for logistics operations, "The entire integration process took about two months. Kuebix's engineering and integrations teams worked closely with ours to make sure everything was working the way we needed it to." Summit Supply's logistics processes are now greatly sped up, making it easier for them to focus on their mission. Instead of wasting time navigating between carrier websites and manually entering order information, all details are automatically populated within Kuebix to make rating and booking fast. Not only that, but documents such as BOLs can be automatically generated with the correct information every time.

Storr goes on to add, "The integration with NetSuite alone probably saves us two minutes on each order. When you multiply that by 80 orders a day, that's a lot of time savings."

By leveraging Kuebix and an integration with NetSuite, Summit Supply is confident that every order is accurate and that the lowest-cost carrier with the best service is chosen on every load. This allows them to deliver on their promise of being a team-driven, customer-focused organization that strives to deliver quality products in a timely manner, at a fair price, with unmatched customer service.



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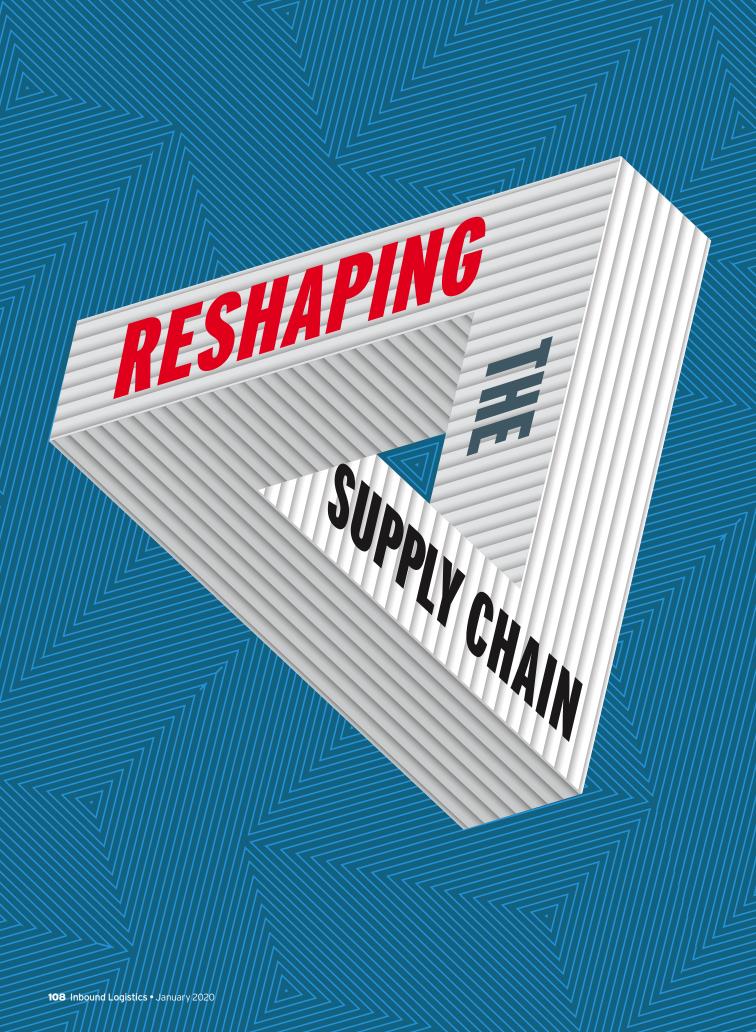
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HOW NEW STRATEGIES, GOALS & TECHNOLOGIES ARE ALTERING SUPPLY CHAIN OPERATIONS

Picture trucking in the United States minus interstate highways. Global trade without shipping containers. Supply chain management with no internet.

Businesses once managed without those innovations, but it's hard now to understand how they did it. That kind of evolution never stops. Today's novelties in logistics technology and strategy will soon become tomorrow's commonplace tools of the trade. Here are some examples. BY MERRILL DOUGLAS

MORE FREIGHT, LESS WASTE



hen trucks drive deadhead miles, or drivers sit around waiting for loads, or tractor-trailers crawl in heavy urban traffic, those underused assets create waste in the supply chain.

Waste hurts the bottom line. That's why some upcoming paradigm shifts involve ways to make better use of transportation assets.

At Class I railroad Kansas City Southern (KCS), for instance, strategists expect to see self-driving trucks form platoons to haul intermodal containers from rail terminals to large distribution centers or industrial parks. In this vision, perhaps four autonomous trucks will follow one rig driven by a human.

"You have one driver, but five loads," says Brian Hancock, executive vice president and chief innovation officer at KCS in Kansas City, Missouri. That increases efficiency right off the bat, reducing the number of scarce and costly resources-drivers-needed to deliver five containers.

Platoons would travel late at night, taking better advantage of another resource: highway capacity. "One of the most underutilized assets in the country is the freeway system around our big

Some paradigm shifts will involve optimizing transportation assets to reduce waste in the supply chain.

urban populations between 10 p.m. and 5 a.m.," says Hancock.

Drivers would no longer struggle with rush hour traffic and construction slowdowns. Instead, multi-truck platoons would zip along nearly empty lanes overnight, completing deliveries faster.

So why use a driver at all? When autonomous trucks hit the market, couldn't a platoon's lead truck drive itself, just like the other four?

"We're not big into having that much freight out there without a driver," Hancock says. It takes a human to manage liability for the platoon and keep the shipment secure.

Of course, this strategy works only if trains arrive at terminals in time for platoons to pick up containers and deliver them as promised. That didn't seem possible in the past. But with the advent of precision scheduling, railroads have been improving their on-time performance, making overnight platooning feasible.

If this innovation can take thousands of trucks off the road during peak traffic hours, cut transportation costs by using fewer drivers, and speed containers to their destinations, then intermodal becomes more attractive, Hancock says. That would add a further efficiency: letting more shippers enjoy the cost benefits of intermodal transportation.



In the future, self-driving trucks will form platoons to haul intermodal containers.





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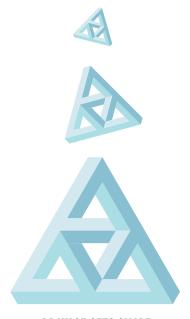
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DRAYAGE GETS SMART

For international shipments, much of the waste occurs when trucks arrive at ports to retrieve containers. It takes a lot of manual labor, with many visits to a port's website, to learn when a container is ready for pickup.

Lacking good visibility, a drayage driver may spend hours waiting at the port for a container that's sitting at the bottom of a stack, with no container handling equipment nearby. Or a container might sit in the yard waiting for the assigned driver to arrive.

"As containers sit in the port for longer than the free time a shipper has with the ocean carrier, costs go up," says Ed Summers, senior product manager at New York-based Loadsmart. Summers leads the team responsible for a new product from Loadsmart called Smart Drayage, which seeks to change the paradigm for container pickups.

Today, when a company with 20 inbound containers on the same ship arranges for drayage, each driver is assigned a particular container. If that box isn't ready when the truck arrives, the driver waits in the terminal.

Under the Smart Drayage model, the company tenders the shipment to Loadsmart, which dispatches carriers to the port. When drivers reach the gate, instead of saying they are there for a specific container, they say they are there to pick up one of the containers in the group.

"The port knows where all their containers and equipment are, thanks to the terminal operating systems that provide high levels of visibility," Summers says. Through an interface to that logistics technology, the Smart Drayage platform determines which containers are easily available for pickup.

"For example, we know that container CDE is at the top of the stack, and it's 50 feet away from a crane that can service it," Summers says. The driver goes to that location, quickly retrieves the container, and gets back on the road. Consignees get their freight faster, and shippers are less likely to incur storage charges at the port.

New drayage technology minimizes driver wait time, gets trucks in and out of the port faster, and increases freight visibility for shippers.

To sweeten the deal for carriers, Loadsmart has arranged for a dedicated Smart Drayage gate at the terminal. Because the system gets them in and out of the port faster, truckers also gain the chance to make more runs in a single day.

Thanks to integration with the terminal system and with several brands of electronic logging devices, Loadsmart increases visibility for shippers, providing updates on the status of their containers, both in the yard and in transit.

Smart Drayage currently operates at the Port of New York and New Jersey. Loadsmart hopes to bring it to other ports as well, Summers says.



The Smart Drayage platform is designed to improve the process for container pickups.

PRACTICAL TIPS for SUPPLY CHAIN DIGITIZATION

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As you launch an initiative to transform your supply chain operations through digitization, here's some advice to keep in mind:

STANDARDIZE YOUR DATA, advises Bo Hagler, CEO at LiveSource, an Atlanta-based firm that provides a cloud-based supplier management system.

Too often, companies store essential data in disparate systems and spreadsheets, with many inconsistencies and redundancies. Enforce standards, and you can start making applesto-apples comparisons.

"Then you can start getting some amazing things from artificial intelligence (AI)," Hagler says. "Start small and build on success," he adds . Don't try to use data analytics to embrace all your opportunities for improvement at once. Rather, define the minimum data you need to support a specific solution, create and test that solution, and then move on to the next thing.

TRY TO SOLVE ONE PROBLEM at the outset-or maybe three, but no more, says Jeanette Barlow, vice president, product management, supply chain at IBM Sterling in Boston. DON'T DEPLOY AI or another advanced technology for its own sake; use it as a tool toward a specific business goal. "It's critical that the technology is rooted in a business outcome that is meaningful and measurable," Barlow says.

CHANGE YOUR PROCESSES,

not your underlying IT systems, says Kaushal Dave, executive vice president and global head of digital supply chain products and customer engagement at Aera Technology in Mountain View, California. Replacing your WMS, TMS, ERP, or other systems can take years, cost a fortune, and not really change the way you do things. Better to implement advanced technologies on top of those systems.

Then, for example, instead of prioritizing orders by customer, you can make decisions based on data pulled from several systems. "It's looking at customers, volumes, lead times, service, inventory, costs, fines– everything you did not look at before," Dave says.



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The paradigm of profit over everything else has started to shift in the business world, according to some corporate leaders. In August 2019, 181 CEOs of major U.S. corporations, members of a group called the Business Roundtable, signed a statement declaring that rather than simply maximizing profits, American businesses should aim to invest in employees, deliver value to customers, deal ethically with suppliers, and support outside communities, according to a CNBC report.

For many companies, delivering value to customers includes a commitment to protect the earth. For many firms, delivering value to customers includes a commitment to protect the earth. Eighty-one percent of people responding to a 2019 Nielsen global survey say they feel strongly that companies should help to improve the environment (*see chart below*).

In response, business leaders have promised to make reforms, such as reducing their use of non-recycled plastics. "A lot of the filings by most of these companies have clearly stated sustainability goals and measured against those goals," says Madhav Durbha, group vice president of industry strategy at supply chain software company LLamasoft in Ann Arbor, Michigan.

Some sustainability initiatives involve relatively simple changes in supply chain strategies, such as optimizing freight routes to reduce empty miles, postponing production to better match demand and avoid throwing out excess inventory, and shipping products in smaller packages. Other steps require longerrange planning.

For example, Costco has switched from round to square-shaped containers for products such as nuts, letting it pack more units in a truck. "That requires collaboration between research and development and the logistics organization to make sure the packaging can take the load," Durbha says.

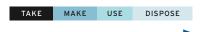
Procter & Gamble (P&G) has launched a product line called DS3, which reduces hand soap, laundry detergent, and other cleaners to small, dry swatches that foam up when the user adds water. By minimizing water in the product, P&G vastly reduces the bulk it must ship, thus cutting the number of trucks it puts on the road. "It provides a ton of efficiencies, reducing not just the carbon footprint but also the water footprint," Durbha says.

Some LLamasoft customers use the company's supply chain planning software to promote sustainability along with other business goals. "Instead of modeling to optimize profit, revenue, service, or inventory, companies can explicitly model their carbon footprint optimization," Durbha says.

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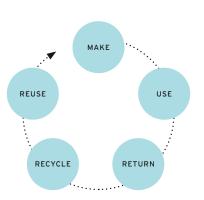
LINEAR ECONOMY

creates waste



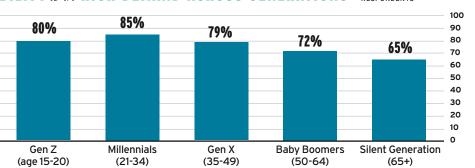
CIRCULAR ECONOMY

eliminates waste



CORPORATE SUSTAINABILITY *is in* **HIGH DEMAND ACROSS GENERATIONS** % OF GLOBAL RESPONDENTS

Percentage of respondents who say that it is "extremely" or "very" important that companies implement programs to improve the environment

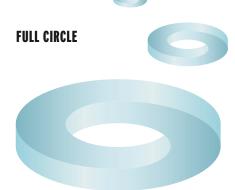


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The shape of things to come in supply chain responsibility is round, according to business advisory company Gartner. By 2029, today's linear economy will transform into a circular one (see graphic, page 114), which will "encourage the continuous reuse of materials to minimize waste and demand for additional natural resource consumption," the company says.

That circular metaphor clearly resonates with TerraCycle, a Trenton, New Jersey-based firm that chose the name "Loop" for a new enterprise to promote reusable packaging.

TerraCycle began its business by collecting and recycling materials-such as flexible plastics and cigarette buttsfor which municipal recycling programs

Making products from recycled materials is just a Band-Aid. The real problem is disposability and single use.

don't have markets. It then started retrieving discarded plastic from beaches for companies to turn into packaging. P&G, for instance, works with TerraCycle to make Head & Shoulders shampoo bottles from beach plastic.

TerraCycle has gotten Colgate, Tide, Häagen-Dazs, Hellmann's, and many other brands to produce special reusable containers for Loop. Consumers order products from those brands through Loop's e-commerce site. UPS delivers a customer's order in a Loop-branded tote. The customer uses the products and then tucks the empties into the tote for shipment back to Loop.

"Loop receives those dirty, empty packages and cleans and sanitizes them," says Tony Rossi, vice president, global business development at Loop. "Then we send them back to the brand to be refilled and re-enter inventory."

Starting in 2020, customers will also be able to buy Loop products at Kroger and Walgreens stores and return the packaging there.

In the United States, Loop operates in 10 Northeastern states. The company also runs the service in parts of Europe.

Loop was born after TerraCycle CEO Tom Szaky concluded that making products from recycled materials won't, on its own, solve the sustainability challenge. "While that's important, it's

just a Band-Aid," Rossi says. "The real problem is disposability and single use. Materials become waste too quickly. We have to stop items from becoming waste to begin with."

Loop promotes reusable packaging to help minimize waste.



UBER-LIKE PLATFORMS for FREIGHT?

What if finding a trucker to move your freight could be as simple as summoning a ride share?

Ride-hailing market leader Uber is among the growing number of companies to introduce automated online marketplaces for truck freight: It launched its Uber Freight business, based in Chicago, in 2017. A competing service, Seattle-based Convoy, recently added \$400 million to its funding, bringing the company's valuation to \$2.75 billion.

Others are also vying to attract shippers and carriers to their freight matching platforms. One is Loadsmart, which offers shippers capacity for full truckload shipments. Using application programming interfaces, Loadsmart feeds its listings into a shipper's transportation management system.

"Rather than having to call each carrier to find out if they're available, and if they'll take the load for a price, we show availability and a real-time price that's instantly bookable," explains Zach Fredericks, business development executive at Loadsmart.

Carriers go through a vetting process before joining Loadsmart's network. Shippers can also tailor the assortment of carriers they see through the logistics technology platform. "If there are certain specifications they're after, we can accommodate that," Fredericks says.

New York-based Transfix is a tech-enabled full truckload broker that lets shippers secure capacity on the spot market, but also helps match shippers and carriers for long-term contracts for dedicated service. Its technology includes a set of pricing algorithms designed to keep carriers and shippers happy with the rates they agree on over the term of their relationship.

"We use millions of data points to constantly input and refine what we believe our contract pricing will be," says Marissa Ash, head of sales at Transfix. "Our shippers have confidence that they're getting the most marketcompetitive price, and that we'll hold that for the time they need us to."





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Companies are using digitization to gain business insights that were never available before.

to analyze thousands of transactions with thousands of contract manufacturers, looking for patterns that indicate incipient problems.

Irregularities such as quality issues or incomplete deliveries might fly under the radar if a company does only a little business with a particular supplier, says Bo Hagler, CEO at LiveSource. But with greater volume, those issues might become significant. Better insight into trends could dissuade you from awarding that supplier more business.

"You cannot reach that decision by just taking a snapshot of the performance based on the way you evaluate it," Hagler says. "You have to look at what's happening across multiple categories."

IoT devices can provide new sources of data for making those decisions. Some manufacturers that work with LiveSource attach sensors to industrial molds—large machines worth upward of \$500,000 that they own, but their suppliers operate.

"Putting IoT devices on that technology enables them to see when the equipment ran and how often," says Hagler. "They can see, based on how much it ran, how many parts it could have produced versus how many they actually received."

Applying analytics to that data, a company might identify problems with efficiency or wasted materials, or even learn that the supplier is using the mold to produce product for other customers.



Companies gain new business insights from advanced digital technologies.

DIGITAL TRANSFORMATION



ome of the biggest shifts in the supply chain world are emerging from advanced digital technologies. Thanks

to artificial intelligence (AI), data analytics, the Internet of Things (IoT), blockchain, and other innovations, companies are using digitization to gain business insights that were never available before, and to collaborate at a level that wasn't possible in the past (for tips on digitizing your supply chain, see sidebar, page 112).

For example, in November 2019, Walmart Canada announced a new blockchain solution that lets it share data and collaborate with 70 trucking carriers.

Customers of Aera Technology use AI to automate what used to be largely manual processes and to augment their ability to make supply chain decisions. Drawing data from an order management system, a warehouse management system, and others, Aera's solution can, for example, prioritize fulfillment for hundreds of thousands of orders, based on established rules.

When setting priorities, this logistics technology considers much more than

which are the biggest customers. "It also looks at volumes you need to ship, profitability, current inventory, service, and fines you would have to pay versus the cost you incur to provide that service to that client," says Kaushal Dave, executive vice president and global head of digital supply chain products and customer engagement at Aera in Mountain View, California.

The system can also respond to exceptions, recommending changes in the fulfillment sequence while avoiding risks such as out-of-stocks and back orders.

"It has to look at hundreds of different data points, which is not humanly possible for the people who were doing this," says Dave. Besides making recommendations based on current conditions, the system looks ahead to make sure that a decision in the present won't cause problems in the future.

For instance, "It constantly predicts the volatility of orders for the next six months based on demand," he says.

LiveSource, a technology provider based in Atlanta, uses AI in its supplier management solution. For instance, a LiveSource customer might use this tool



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BRILLIANT COLLABORATION



dvanced digital technologies such as

AI, blockchain, and IoT play starring roles in the IBM Sterling Supply Chain Suite, a new solution IBM introduced in October 2019. The suite lets companies collaborate with trading partners on the 800,000-member Sterling B2B Network while gaining views into their operations that weren't possible without digitization.

For example, for manufacturers that build to order rather than to stock, Sterling's AI capabilities can reveal imbalances between demand and supply before they cause problems. "Any risk or variation to inbound supply could be incredibly disruptive to production and meeting sales orders," says Jeanette Barlow, vice president, product management, supply chain at IBM Sterling in Boston.

A system driven by AI can detect small anomalies in the inbound flow of materials or components, perhaps a It can predict how those events will affect production and order fulfillment days in advance and then recommend mitigation strategies, such as adjusting order fulfillment plans or tapping alternative sources for materials.

weather delay or a hiccup at customs.

Blockchain creates a ledger where many parties involved in a supply chain—including trading partners and service providers—can access a common pool of data, providing one shared source of truth and ensuring that everyone who needs certain information will receive it. Access is based on permissions, so each

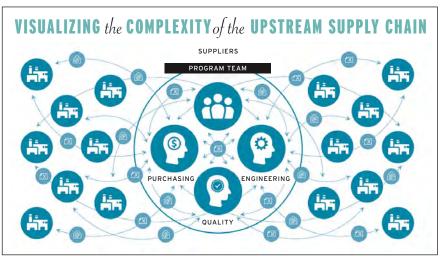
Artificial intelligence capabilities can reveal imbalances between demand and supply before they cause problems.

participant sees only the data needed to perform its role.

Data in the blockchain could include IoT sensor data. Data from documents tells participants where cargo is supposed to be; sensor data tells where it really is; and, in a temperature-controlled shipment, temperature sensors report on the load's condition.

"You can get an incredibly powerful view of your supply chain shared among your key participants," Barlow says. Then, if an exception occurs, AI will detect it and alert everyone concerned to the possible consequences.

Innovations of this sort may stand on the cutting edge of supply chain practice right now. But in a few years, it could be hard to understand how anyone did business without them.





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SUSTAINABILITY SUSTAINS

xpect maximized capacity and minimized empty miles.

We will see a more concerted effort to reduce waste in the supply chain. Eliminating empty miles and excess carbon dioxide emissions will become a bigger focus for smaller companies as larger organizations use it as criteria when selecting supply chain partners.

Major manufacturers, shippers, and carriers have the clout to move the rest of the market. Smaller companies will invest in sustainable initiatives and reducing carbon emissions as a cost of working with major companies.

—Pervinder Johar CEO, Blume Global

The linear supply chain will be replaced by the circular supply chain. On the heels of Nike's Reuse-A-Shoe program and Adidas' partnership with Parley for the Oceans, companies will start moving away from the old-school "take. make, and throw away" model, and will shift toward "supply chain loops" that cut down on costs and create less waste. Instead of producing one-time-use products, companies are refurbishing used parts or melting down products to transform them back into their raw material form. -Ron Volpe Vice President, Apps Business

Development, Tradeshift

Governments and customers will push for manufacturing to be more environmentally sustainable.

The way we create value in business today is linear: We use natural resources to build a product, sell that product into market, and dispose of it at the end of its life cycle. The circular economy aims to reduce waste and the continual use of resources.

Adidas has the Futurecraft Loop shoe where consumers return the shoes to Adidas once they have worn them out, and the shoes are repurposed for future Loops.

It's inevitable that this same model will make its way to the manufacturing sector, as governments, consumers, and Wall Street will all expect more sustainable business practices.

-Gary Brooks Chief Marketing Officer, Syncron Sustainable fashion is in demand, and will continue to be for years. With major brands such as Patagonia continuing to push out new initiatives that highlight sustainable practices, more brands will have to follow suit in the coming years to stay competitive.

In 2020, companies will follow this path and evaluate their own practices, including energy and water use, to make sure they are limiting negative effects on the environment.

As part of this, companies will increasingly employ the Higg Index, an assessment standard measuring sustainability performance. With this, brands will have a better understanding of their environmental effects, as well as their partners, within the supply chain.

Consumers will also require complete transparency into the supply chain—from origin to sale. To keep customers happy in the year ahead, companies will review their thirdparty suppliers and elect to work with partners that are compliant with sustainability standards, requiring them to adopt technology to ensure a transparent and sustainable supply chain.

By implementing planning tools across the supply chain, companies will be better able to align production to sale, and reduce the amount of unsold goods.

—Paul Magel President, Business Applications and Technology Outsourcing Division, CGS



SCANNING THE DIGITAL SUPPLY CHAIN

xpect a shift from people-centric to datacentric decision-making. In 2020, we will witness a move to automated decisionmaking that leverages predictive and prescriptive analytics, including artificial intelligence (AI).

To meet rising customer demand for tailored service, industries will need to make better use of their supply chain technology to remain innovative and efficient.

—Abe Eshkenazi сео, аsсм

TIGHTER CONNECTIONS

Supply chain networks are connecting logistics parties more tightly. We are transitioning from legacy point-to-point EDI networks to real-time, API, collaborative networks.

Furthermore, there are new specialty networks that connect parties and also integrate into the larger networks.

These include real-time freight visibility; Internet of Things (IoT) networks for tracking assets such as containers, pallets, and unit load devices; and capacity networks. This is creating increased visibility and collaboration, which result in improved asset and fleet utilization, better inventory control, and reduced congestion and detention.

Data-as-a-Service (DaaS).

With the expansion of networks and associated data, there is a huge growth in harmonizing data and providing it as a service to downstream applications. This includes data on truck locations/routes and data to identify warehouses and their congestion.

Additionally, information on trading lanes, volumes at ports, and shipments from overseas suppliers can be leveraged in applications for sourcing, transportation, and carrier negotiation.

Analytics & Al. With the

growth of networks and data, the ability to leverage analytics for better and faster decision-making is unprecedented. New technology for visualization and benchmarking is making its way into operational teams to enable more agile supply chains.

As data quality increases, AI can further accelerate supply chains by using data to improve carrier selection, identify new sources of products, and classify products for global trade more quickly.

—Brian Hodgson Senior Vice President, Industry Strategy, Descartes Al won't yet allow for users to sit back and relax while it handles all of their tasks for them but it will make an appearance in back-office tasks. Freight payment auditing, invoice payment, and in some select areas, chatbots will be the initial mainstream uses of Al. They will be seen not as an anomaly but as more mainstream in 2020.

-Sean Riley Global Director of Manufacturing and Transportation, Software AG e've been talking about the potential of the digital supply chain for more than two decades. In 2020, the balance finally shifts from future potential to current benefits.

Connected devices and IoT-enabled solutions are giving us more data than ever to make better decisions connecting the legs of the supply chain path while simplifying information exchange.

To improve the flow of products and information from point A to point B, we will see more shippers adding sensors on almost everything, not just the most expensive equipment.

Al will reach its potential by becoming domain specific. The potential productivity gains from Al are anticipated to be anywhere from \$13.7 trillion to \$15.7 trillion by 2030, according to the McKinsey Global Institute and PricewaterhouseCoopers, respectively.

The next phase of AI success happens when technical capabilities are matched with industryspecific expertise. We are at a significant inflection point in the adoption of AI-enabled solutions. Linking domain expertise and data with technical innovation is necessary for technology to reach its full potential to deliver measurable, effective results.

—Pervinder Johar Blume Global

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WAREHOUSES/DCs: SAVING SPACE

AUTOMATION PROLIFERATION

A utomation is on a highgrowth trajectory and its variety and sophistication are increasing. What was once considered fringe technology will start to become more mainline. Sophisticated automation such as shuttle systems and high-density picking solutions will gain more adoption.

Better utilizing workers.

With the proliferation of automation technology, warehouse workers will be freed up to focus on other tasks. This is an important factor in the demand for automation as many warehouses face a labor shortage and need to better leverage available employees.

Voice direction. More DCs will use solutions with voice direction to guide workers through complex steps, eliminating the need for them to look at their devices. This won't be a two-way interaction—workers will continue to do their jobs as normal, but will be eyes-free from guidance.

Using the supply chain as a differentiator. It's no longer enough to have status quo supply chain operations that are "good enough." A modern, efficient supply chain is a competitive advantage, driving down an organization's costs, increasing capacity, and maximizing labor.

Intelligent WMS. This is going to become much more mainstream and offers a huge benefit for the warehouse and the individual worker.

The system can automatically recognize where it needs to make an adjustment. If workers were responsible for noticing that need, they would spend a lot of time monitoring the system and might miss a change. That's not efficient or reliable.

Overall, the supply chain will start to move advanced technology from pilot programs to fullscale rollouts. Many DCs are reaching a new level of knowledge and are confidently embracing the new technology.

—Adam Kline Senior Director, Product Management, Manhattan Associates

Private cellular networks will enable mobile robots to have always-on connectivity throughout the warehouse floor and adjacent outdoor areas.

Because of this, mobile robots will be able to move goods around the warehouse, navigating around obstacles without following a fixed path. They will increase productivity as the number of warehouses using robots worldwide will increase from 4,000 in 2018 to more than 50,000 by 2025. 5G connectivity will enable manufacturers to implement smart automation solutions to improve inventory accuracy. For example, drone-based stock counting systems will ensure the digital inventory matches the physical so that products expected to be in stock are always in stock.

According to ABI Research, an average U.S. third-party logistics provider will generate a net increase of approximately \$230 million during a five-year period through conditionbased monitoring and asset tracking.

Augmented reality (AR), based on a foundation of cellular connectivity, will accelerate workforce training and improve warehouse picking precision. AR-enabled smart glasses will provide workers with hands-free displays of instructions and information to help them accurately locate, scan, sort, and move inventory-reducing human error and providing efficiency gains starting between 5% and 25%.

-Erik Josefsson Head of Advanced Industries, Ericsson



Based on recent surveys of chemical distribution rail customers, freight rail costs will continue to rise: 50% of chemical distribution rail customers saw a rate increase in 2018; more than one quarter of chemical distributors surveyed in the first half of 2019 saw rate increases.

Furthermore, many National Association of Chemical Distributors rail-shipping members report they received wrongful demurrage and/ or accessorial charges, and that in a majority of those cases the rail carrier failed to provide on-time delivery before the charge was imposed.

If this trend of increased freight rail rates and fees holds, rail users in 2020 will need to factor in those increased costs, leading to higher costs along the entire supply chain.

2020 will be the year the Surface Transportation Board will be fully staffed. A fully staffed and functioning U.S. Surface Transportation Board can tackle some challenges with rail competition and punitive freight rail policies to help tamp down those supply chain costs and support growth across the entire U.S. economy. Unfortunately, shippers won't feel that relief for a couple of years.

-Eric R. Byer President and CEO, National Association of Chemical Distributors



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BRANDING RETAIL

Getting returns right is critical for retailer success, with 95% of U.S. consumers saying a bad returns experience would make them less likely to purchase from a brand in the future. In 2020, brands will double down on returns, with a focus on both policy and process.

Online shopping has drastically changed the perception of what's considered a new item and what's a return. If a return is made within an immediate window, then it's clear; when a user wants to complete a return three months later, it's murkier. As retailers adopt more flexible returns policies, this is a question they'll need to answer.

Turning a return into a new sale should be a priority. There's often a qualitycontrol process, then back to the retailer to re-enter the available inventory. The ability to shorten this cycle or eliminate it entirely—will be critical.

—Krish Iyer Director of Strategic Alliances, ShipStation

3D PRINTING GETS FASHIONABLE

esigning clothes has long been a labor-intensive, drawn-out process that often results in wasted products. In 2020, 3D technology will be the game changer.

Designers will start to use 3D technology to more effectively collaborate with suppliers, allowing products to be made faster and with fewer wasted resources.

In the product life cycle management phase, fashion brands will increasingly use 3D technology for collaborative design, sampling, and fit sessions, allowing them to adjust product iterations and changes in real time. Brands will leverage 3D models to assess the fit of a garment without having to waste design materials or time. by sharing designs and samples virtually with internal team members and external suppliers.

By adjusting their processes and limiting the number of prototypes that need to be cut and sewn, brands will further reduce the amount of physical sampling and increase the speed to market. As a result, they will also reduce their own carbon footprint and cut costs.

—Paul Magel cgs

SMALL RETAILERS, SIZABLE CHALLENGES

Retailers are innovating at a faster pace than ever before to keep up with Amazon. There is growth opportunity in 2020 for smaller brands that keep—or in some cases, take back control of their supply chain, and utilize new systems and technologies to achieve greater levels of transparency, visibility, and growth.

Supply chain autonomy.

Brands of all sizes that control their own supply chain will find they are able to achieve higher levels of growth, closer relationships with customers, and higher revenue. It's likely smaller brands will follow suit, recognizing the benefit of maintaining autonomy in 2020 and for years to come.

Smaller brands have the edge on transparency. What products can you sell that are yours exclusively, that cannot be counterfeited or down-marketed? When a customer buys your product, how can you make it clear to them that they acquired the "real" version?

Compared to larger, more ambiguous retailers, small brands are at an advantage when it comes to achieving full transparency in every aspect of their business, including their supply chain. Companies that add their own secret sauce, while providing unimpeachable customer service experience and a guaranteed product provenance, will continue to be more successful. Customers care deeply about getting authentic products and will pay extra for that assurance.

.....

RFID is on the rise. Smaller brands can take steps to obtain documentable proof that products are real, including cost-effective, scalable technologies that can be used to drive greater visibility into their supply chain, from manufacturing to customs clearance and transportation.

One example of this technology is radio frequency identification (RFID), which drives greater inventory visibility and mitigates risk, theft, and product loss.

Once a luxury only affordable to larger retailers, RFID is now attainable to smaller brands. As these technologies become increasingly more affordable, we anticipate a fast uptick in implementation by small businesses.

-Bruce Welty CEO/Founder, Quiet Logistics

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Canadian consumers will continue to purchase goods online from the United States and around the world. Canadian companies will increasingly see the benefit of truly going global expanding beyond the U.S. market-to drive growth for their business. The world needs more Canada. -Andrew Williams CEO, DHL Express Canada

ariffs and trade woes mean new supply chain opportunities in Southeast Asia.

Bigger, more sophisticated supply chains will seek out new primary sources. In part due to the tension over tariffs with China, companies are moving their supply chains out of the country and building up new footholds in Southeast Asia.

Aside from tariff concerns, companies are looking at overall cost of business and the availability of resources to meet their needs.

—Pervinder Johar Blume Global

GLOBAL VIEW

Unpredictable events like international trade tariffs, project yellowhammer, and no-deal Brexit will continue to threaten supplier relations, costs, and global supply chain partnerships—with delays at the border lasting up to six months.

Companies will prioritize a superior system of communication between partners and customers to ensure organizational agility and safeguard against potential devastation.

Manufacturers, retailers, and logistics companies that achieve tighter integration between systems, partners, and applications (and can onboard or offboard each as needed) will build the most resilience during economic uncertainty.

-Dylan Lee Director of Product Marketing, Cleo

With rising geopolitical tension across the world—Hong Kong protests, China-U.S. tension, Brexit, and more—companies will need to engage more proactively with trading partners across all tiers of the supply chain on addressing potential risks, improving sustainable procurement and supply chain performance, and ensuring they have alternative forms of supply in the face of disruption.

Know Your Suppliers initiatives that enable procurement teams to make better decisions are becoming must-haves in the age of geopolitical tensions and regulatory pressure.

—Sylvain Guyoton Senior Vice President of Research, EcoVadis e can no longer consider North America a "safe zone" for suppliers, transportation networks, warehousing, and manufacturing. We will continue to experience an increase in hurricanes, sea levels, and other natural disasters due to climate change.

In 2020, more risk leaders will re-evaluate their supplier and logistics strategies to mitigate the risk of costly production slowdowns and rethink their classification of the United States as a traditional safe zone.

Tariffs and trade wars will accelerate in 2020. More companies will begin to leverage the price increases associated with tariffs as a negotiation weapon, which will add even more complexity to the market.

Staying on top of the geopolitical landscape and the interconnected changes associated with changing regulations will be crucial. This will impact the entire supply chain, including supply negotiation, transportation, supplier risk, compliance, and more.

—Bill DeMartino General Manager of North America, riskmethods



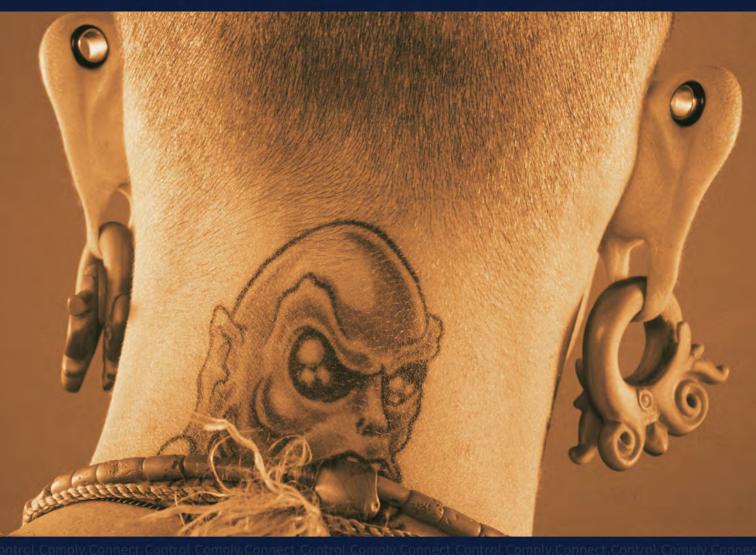
mployers will have to devote more resources to find and retain talent. Programs like the expansion of the U.S. Chamber of Commerce Foundation's Talent Pipeline Management movement will offer a hybrid learning experience with the opportunity to impact more than 3 million businesses nationwide.

—Abe Eshkenazi ASCM

The rise in robotics, algorithmic intelligence, and cloud computing is making an entire generation of supply chain professionals obsolete. These technologies are hollowing out the middle of the jobs' spectrum, pushing humans to the edges, requiring extreme physical or cognitive dexterity.

To close the skills gap, organizations will need to invest in upskilling the workforce through online platforms and continuous learning, embrace intern and co-op programs, promote inclusiveness, rotate employees through different functions to gain a broader perspective, and invest in cognitive automation to relieve employees from routine tasks.

—Dr. Madhav Durbha Group Vice President of Industry Strategy, LLamasoft In some circles, noncompliance is acceptable. Is your Supply Chain one of them?



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SUPPLY CHAIN VELOCITY SPEEDS UP

ompanies that are already under extreme market pressure to satisfy customer demand for greater speed in product availability and delivery will have to find new ways to run their supply chains like digital natives such as Amazon.

To meet market expectations, leading companies will make significant improvements in supply chain performance by leveraging newer technologies, including cloud-based systems, IoT, AI and machine learning, and cognitive automation. These technologies automate and augment the decisionmaking of supply chain managers.

-Arnaud Morvan Senior Engagement Director, Customer Engagement, Aera Technology

Prone deliveries are the next natural step in the midst of an instantgratification, on-demand culture. In 2020, customers', retailers', and restaurants' appetites will grow for even faster and more affordable, sustainable deliveries.

We will see developing regulatory frameworks

enabling the deployment of large-scale on-demand drone deliveries in the United States. Drone operators will need to collaborate closely with regulators and local partners to get their systems off the ground.

.....

Following the debut of this new set of regulations, the first large-scale drone delivery deployments will begin rolling out. These kinds of deliveries will redefine our understanding of on demand and will create a ripple effect throughout the supply chain.

-Yariv Bash CEO and Co-Founder, Flytrex Better technology and planning will close the gap between planning and execution.

Traditional, long planning cycles don't align to the expectations of today's consumers. While the Amazon effect has elevated customer experience across the board, it has also resulted in companies stockpiling trillions of dollars of inventory. As a result, fewer companies will stockpile inventory and focus more on improving inventory management and execution in 2020.

—Pervinder Johar Blume Global



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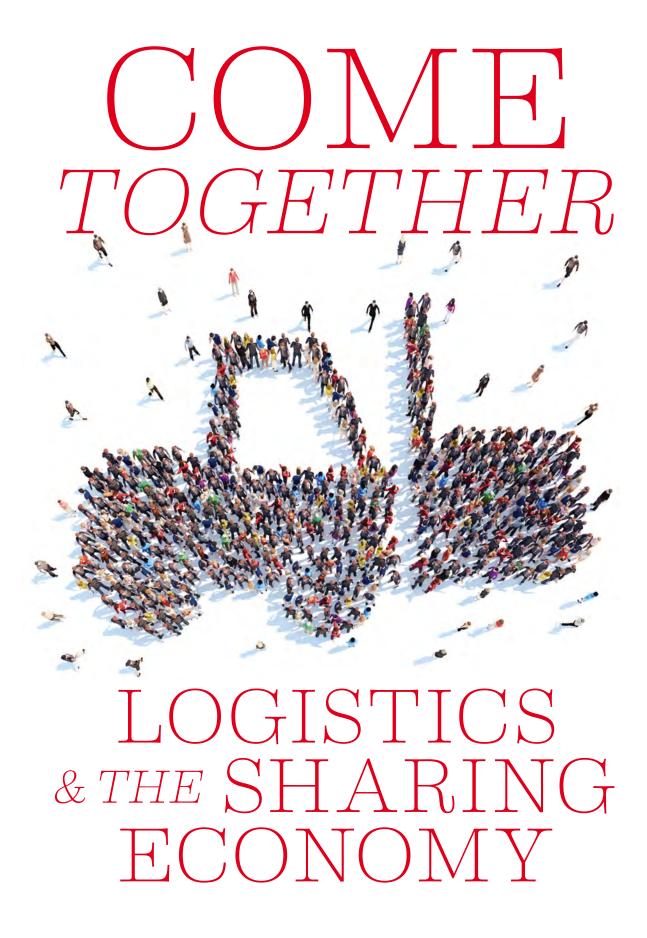
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LOGISTICS EMBRACES THE SHARING ECONOMY WITH SUPPLY CHAIN COLLABORATIONS, INDUSTRY CROSSOVERS, AND UNEXPECTED PARTNERSHIPS BRINGING FULFILLMENT AND TRANSPORTATION EFFICIENCIES.

he sharing economy just keeps growing, with options to borrow everything from someone's car to their cabbages. The prevalence of this sharing model was instrumental in getting Coterie Baby's baby products business off the ground. Coterie spent more than two years creating its high-quality, sustainable diaper products, and expected to launch a new line of baby wipes before the end of 2019.

But two significant challenges remained: finding a way to manage fulfillment and a place to store its products. The traditional warehouse management process of investing in a dedicated space, signing long-term leases, or working with third-party logistics (3PL) partners who may shy away from onboarding companies with lower startup volumes made the job even tougher.

Instead, the New York City company took the on-demand route. On a recommendation from executives at mattress startup Casper Sleep, Coterie teamed up with Seattle-based Flexe, an on-demand warehousing provider.

This decision feeds into an evolving trend recently grounded in the hospitality,

BY JENNIFER BALJKO



YOU NEED A WAREHOUSE OR A TRUCK? WITH THE SHARING ECONOMY, YOU HAVE IT

ride-sharing, and entertainment industries with companies such as AirBnb and Lyft. The availability of on-demand flexibility and access, along with other strategies, is creating new versions of supply chain collaboration to increase efficiencies, reduce costs, and capitalize on under-used assets.

"The on-demand warehousing model immediately sounded like a great option for what we needed," says Mark O'Toole, Coterie's vice president of product and operations. "It offered access to an enterprise-grade fulfillment network without having to commit to a long-term lease or massive investments to acquire our own distribution centers.

"Through Flexe, we get both the technology platform we need to manage operations and access to some of the world's largest and most sophisticated 3PLs," he adds.

With Flexe's help, "We were able to set up our entire fulfillment network in less than two months, and start offering a twoday delivery promise right out of the gate without ever signing a lease," says O'Toole.

GETTING CONNECTED

In the shipping world, omni-channel sales and fulfillment business models running at Amazon-induced hyper-fast delivery speeds are intersecting with the sharing economy's commoditization and monetization of physical assets and making these assets available whenever people want or need them at more affordable prices. You want a movie, a room, or a car, here you have it. You need a warehouse, a truck, and a fulfillment management solution, here you have that, too.

"In the post-mobile app world of real-time communication, same-day delivery, and always-on consumption,





Flexe offers on-demand warehousing with unified technology that provides total control and visibility across the user's network.

people living especially in cities have come to expect instant gratification from e-commerce platforms, social media, and on-demand services," according to the 2017 DHL Customer Solutions and Innovation report, "Sharing Economy Logistics" by Ben Gesing, project manager at DHL Trend Research.

"The sharing economy has proved highly disruptive to several industries that are asset-heavy in nature, such as mobility and hospitality," the report notes. "But the technologies and business models enabling the sharing economy can be applied to any industry. Logistics, with all its heavy assets and infrastructure, is no exception."

WAREHOUSING ON DEMAND

Companies like Flexe have already seen the truth in that.

The on-demand warehousing company uses its technology platform to connect a network of more than 1,000 warehouses with a team of logistics experts, retailers, and brands to resolve warehouse capacity constraints and provide dynamic e-commerce fulfillment. Flexe's dominance in this young, but growing, segment has secured it \$64 million in funding since it was founded in 2013.

"Because customer needs are constantly evolving, shippers can't sit

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back and be excited about what they just did," says Megan Evert, Flexe's senior vice president of operations. "They have to keep looking for innovative ways to fulfill demand."

Flexe works with a range of shippers, from small businesses in startup mode who want to test their product at a pop-up shop for a few weeks all the way up to top-tier names such as Walmart and Ace Hardware who need additional flexibility and space for promotional, seasonal, or excess inventory.

BRINGING IN 3PL PARTNERS

Evert is less surprised by the shippers who come to Flexe for innovative solutions than by the collaborative relationship it is building with 3PLs, who in some contexts may see Flexe as a competitor.

"It has been interesting to see the



THE TECHNOLOGIES AND BUSINESS MODELS ENABLING THE SHARING ECONOMY CAN BE APPLIED TO LOGISTICS, WITH ITS HEAVY ASSETS AND INFRASTRUCTURE.

way 3PLs engage with us," Evert notes. "Sometimes, we bring them a piece of business that they may not have gotten themselves, and we can help 3PLs, especially regional providers, fit into a brand's national warehouse and logistics strategy."

That was the case for ITS Logistics of Reno, Nevada.

When Walmart ran a two-week promotion for televisions in fall 2018,

SHARING IS CARING ABOUT THE ENVIRONMENT

Two very different industries—FIFCO, a food and beverage company and CEMEX, a construction materials supplier—strategically united their supply chains to reduce greenhouse gas emissions.

For the past year, CEMEX trucks that used to return empty to a distribution center on the Pacific coast of Costa Rica have been bringing products to FIFCO's distribution center in the area.

This initiative optimizes travel and maximizes the use of the fleet's fossil fuel. At the same time, it also contributes to reducing the traffic of heavy vehicles on the shared routes of both companies and placing safer equipment on hightraffic routes.

In the one year since the alliance started, both companies report positive environmental results. "We contributed to the Country Carbon Neutrality Program and to the decarbonization of the economy," says Gisela Sanchez, director of corporate relations, FIFCO.

"We have also saved 62,292 liters (16,455 gallons) of diesel and decreased 165,938 kg (365,830 pounds) of carbon dioxide equivalent, and reduced traffic in two of the country's most important routes," Sanchez says.

"An integral part of the initiative was acquiring doubletrailer equipment," adds Enrique A. Garcia, country director of CEMEX Costa Rica. "We implemented safety devices called 'mobile eyes' to improve driving, which avoids about 95% of frontal collisions, and up to 60% of all types of collisions.

"With this, we contribute to road safety with high-tech equipment and highly trained drivers," he adds. The shared transportation is

carried out with four doubletrailer trucks called bitrenes. Their double articulation gives them 40% more load capacity for the monthly average of 36 trips—28 to Nicoya, and eight to Puntarenas.

To reach this agreement, FIFCO and CEMAX had to establish logistics procedures and controls and execute rigorous quality and safety protocols on all trucks.

Finished products are loaded in FIFCO's distribution centers, where they carry out sweeping and blowing processes with pressurized air to eliminate all particles and to guarantee that transporting goods of different types and origin does not affect the quality and safety of the product delivered to the consumer.



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www.distributiontechnology.com 704-587-5587 it turned to Flexe to supplement its warehousing and logistics needs. Flexe then reached out to ITS for help in positioning product on the West Coast.

"Everyone thinks that Walmart has all the space in the world, but they are still building out the e-commerce side of the business," says Ryan Martin, president of distribution services at ITS Logistics. "Flexe asked if we had a decent-size warehousing option they could use for the promotion.

"It was extremely successful, and turned out to be a nice shot in the arm for our revenue," Martin adds. Additionally, since Flexe uses a simpler web-based platform than ITS uses in-house, it was easy and efficient to move Walmart's products in and out of the warehouse.

CO-WORKING TO CO-WAREHOUSING

On-demand warehousing is not the only place ripe for new opportunities and collaboration. The extension of co-working into co-warehousing opens many more options for people to share supply chain ideas and build off best practices.

MANY SMALL BUSINESSES NEED A SUPPORT NETWORK BUT DON'T NEED EXPENSIVE WAREHOUSE LEASES.

Saltbox, an Atlanta-based startup, picks up where co-working leaves off. It offers a diverse group of business owners, importers and exporters, distributors, manufacturers, and e-commerce operators a place to be both office mates and warehousing colleagues. Its goal is to make it easier for people who need a warehouse to run their businesses, while creating a collaborative environment to cross-pollinate business models, supply chain practices, and logistics and warehousing management strategies.

"We want to create not only functional, physical spaces where people



can form a community, but also remove the friction that exists for the 'Concrete Class' entrepreneur," explains Tyler Scriven, Saltbox's co-founder and CEO.

Many entrepreneurs and small business owners are caught in a tough spot today, he adds. They need a place to grow their companies and a network of support. But they don't want or need expensive, multi-year leases for thousands of feet of warehouse space in old buildings without modern conveniences and far from city centers.

Unlike technology and services employees and entrepreneurs who can find what they need in the growing number of co-working spaces in most cities, those who need more than a desk and an internet connection have trouble finding similar spaces.

Acugenie Mack looked forward to the day she could move natural hair products in and out of her own warehouse space. She outgrew her capacity of accepting and storing boxes in her garage, and hoped for a shipping dock to receive goods from distributors and route outbound packages to consumers.

But a long-term rental of a large amount of warehouse space, with all the implied insurance costs and potential liabilities, was still out of reach for her one-year-old startup.

"It's difficult to have an inventory management system in place when your garage is your warehouse," says Mack, who draws on her previous experience in IT, law, and manufacturing to run her e-business. "We see our business growing, but we couldn't take out a fiveor 10-year lease for warehousing space.

"We began to think about how we could minimize overhead, share the responsibility of having warehouse space, increase our revenue, and collaborate with others," she adds.

Mack's company, Manetain Beauty, an Atlanta-based, online, direct-toconsumer business, found a solution with Saltbox.

"We take a human-centric approach to solving an industrial space problem," Scriven says. "We look at the needs of the humans who are trying to run their businesses and build a hyperfunctional space to support the entrepreneurial community.

"Traditionally, warehouses are masculine environments—they're cold, dirty, in distant locations, and maybe even unsafe. With Saltbox, we wanted to create a fresh, bright place where everyone feels welcome," adds Scriven, noting that half of Saltbox's founding members are women entrepreneurs.

So who's on board with Saltbox's co-warehousing idea? Founding members include a popular physician/ author who wants to consolidate several warehouse spaces storing his books; a Caribbean food product importer; a dressmaker; several remote workers from a company doing \$6 billion in revenue; and Aeugenie Mack's Manetain Beauty.

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Saltbox was founded by e-commerce, logistics, and technology professionals to offer shared, purpose-built warehousing for entrepreneurs who need space for physical goods and materials.





For Mack, the Saltbox model makes sense for where her company is today.

"Finding a way to share warehousing and maybe shipping services will have a big impact on our margin," Mack says. "It's also exciting to have a community where we can inspire each other and incorporate ideas that can benefit us all."

ORDERING IT FRESH

Transportation and delivery innovations have also created interesting supply chain pairings.

Food marketplace FreshSpoke, as an example, makes it easier for wholesale food buyers at restaurants and supermarkets to source directly from local food producers. The Barrie, Ontario-based company, which incorporates many sharing economy elements, uses a logistics platform to connect buyers and sellers to simplify order, payment, and delivery.

FINDING A WAY TO SHARE WAREHOUSING AND SHIPPING SERVICES CAN HAVE A BIG IMPACT ON SMALL COMPANY MARGINS.

But what really makes it work is FreshSpoke's ability to tap into existing excess transportation capacity in the commercial delivery sectors. The company works with drivers, fleet operators, and food suppliers who make other deliveries during a regular shift and want to supplement their revenue by filling their empty trucks with food goods.

"We never intended to get into the logistics business when we started in 2014," says Marcia Woods, FreshSpoke's co-founder and CEO. "We wanted to support the local food chain, but ended up trying to solve the distribution challenge of getting fresh local products into the wholesale food market.

"We got feedback from the buyers and sellers that there was already enough awareness about food sustainability, food literacy, and connecting the local food chain," she adds. "What everyone asked



is, 'How are we going to get our food from here to there?'

"We knew it would be environmentally irresponsible to put more trucks on the road," Woods says. "But we knew that while many trucks move full in one direction, between 40% and 60% return empty. We thought it would be a good idea to tap into that excess capacity."

What also helped FreshSpoke was timing. When the company took its proof of concept to market in 2016, the sharing economy models of Airbnb, Uber, and others had already disrupted the world and gained traction. That top-of-mind attention on how other industries were gaining efficiencies with these emerging business practices earned FreshSpoke buy-in from the community it targeted.

The company is now teamed up with 306 local food suppliers and 650 buyers in Ontario, Canada. FreshSpoke is expanding into Ohio, and Woods hopes to scale the model to other regions.

SPACE MATTERS

In the end, regardless of where inspiration comes from or which supply chain practices are borrowed from other sectors, the fundamentals will remain fundamentals.

"Businesses are always changing, but the thinking still revolves around how to best use space, how to keep smaller amounts of inventory closer to customers, and how to satisfy customers through every node in the network," says Richard McDuffie, chief operating officer at Kane Is Able, a 3PL based in Scranton, Pennsylvania. "Everyone is looking at how to build a better mousetrap. In some areas, collaboration will help achieve that."

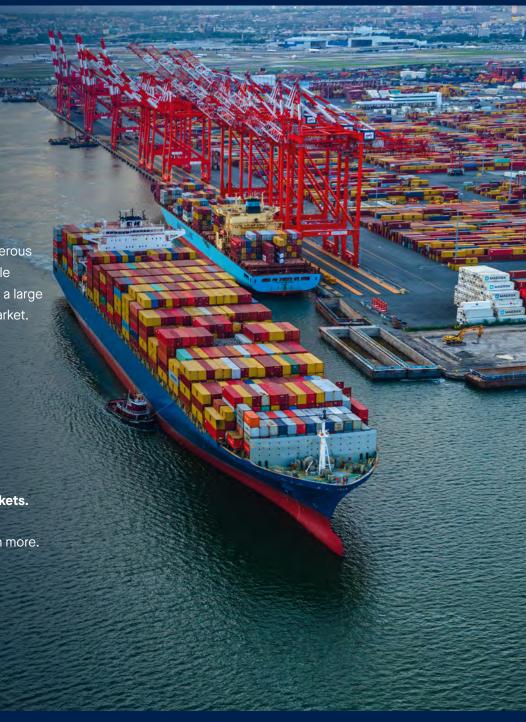


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BETTER MATCHING DEMAND TO SUPPLY AND ADJUSTING CONTRACTS, TENDERING, AND INVOICE AUDITING STRATEGIES CAN HELP CONTROL TRANSPORTATION COSTS WHEN RATES ARE ON THE RISE.

BY MERRILL DOUGLAS



Prices for freight and parcel transportation look ready to rise in 2020. Spot truckload rates will rise by 5% and contract rates will rise by 2% from 2019, according to DAT Solutions, which operates a well-known load board.

Coyote Logistics' research predicts an increase in spot market freight rates in 2020. UPS, Coyote's parent company, also announced in November 2019 that rates for its ground, air, and international services would increase by an average of 4.9%.

Even with published rates increasing, shippers can keep their direct transportation costs down by focusing on three areas: contractual relationships, day-to-day tendering, and invoice audits.

CONSTRUCTING CONTRACTS

Like the financial market, the transportation market's capacity and rates are always in flux. And like savvy investors, shippers should prepare for these ups and downs by putting their eggs in more than one basket. That means companies should establish contract rates with a core set of carriers and also draw on the spot market.

"The same goes for the modes of transportation a company is using and the different contract structures, whether it's contract freight or dedicated freight," says Kevin Zweier, vice president of the transportation practice at Atlanta-based supply chain consultancy Chainalytics.

Companies that saw truckload rates decrease in 2018 may be tempted to contract with fewer carriers, select the lowest-cost providers, and assume that competition is unnecessary. That approach can backfire, however, when capacity tightens and rates go back up. "If you want those carriers to be there for you when things flip, you have to be there for them now and not be too opportunistic," Zweier says.

The cost of transportation involves more than the basic freight rate. Contracts often spell out additional fees called "accessorials," such as a fuel surcharge, an extra charge for delivering to residential areas, or a detention charge for holding a trailer too long.

"Those charges add up quickly," notes Michele Vernola, executive vice president of California-based MCG Logistics, which provides logistics consulting and technology solutions for freight and parcel shippers. When negotiating with parcel carriers, shippers often overlook accessorials and only focus on getting a big discount on the published rates. "When peeling back the layers, however, and identifying all the accessorial fees associated with the shipment-level detail, customers have the opportunity to save money by negotiating other items in addition to improving the discount percentage," Vernola says.

Parcel shippers can also negotiate the formula used to calculate the cost of shipping an individual package. That formula depends on the parcel's dimensions as well as its weight, and involves a carrier-specific factor called the "dimensional weight divisor."

The published dimensional weight divisor at UPS and FedEx is currently

PREPARING FOR 2020

After six consecutive quarters of steep decline, spot rates are heading back toward inflation, according to Coyote Logistics' Q4 2019 Market Update & Forecast.

• For most shippers, 2019 was smooth sailing. Primary tender acceptance and service levels were high, capacity was plentiful and, as a result, many successfully reduced their transportation spend.

• Carriers, on the other hand, had a tougher road, experiencing financial pressure as they trudged through deflationary market conditions.

• Now, the market has turned, and 2020 will likely feel much different than last year. Here are some steps to take to prepare for the coming year.

FOR SHIPPERS

Double down on trusted providers in your request for proposal. As the market continues to inflate, carriers will have a greater incentive to pursue spot opportunities.

Lean on relationships with high-service carriers. Pad your 2020 freight budget (if you can). You may be able to net another year of primary rate decreases, but do not expect your tender acceptance levels to perform at the same level-anticipate more unplanned exposure to the spot market.

FOR CARRIERS

Honor your commitments. To maintain your carrierof-choice strategy, you may need to forego some profitable spot opportunities. With the anticipated rise in demand, be strategic with who and what you commit to for 2020.

Prioritize strategic business relationships. Work closely with your premium shipping partners that have kept your trucks loaded during the past year. Develop a plan to help them mitigate the effects of market fluctuation. Standing by them now will help you in the next cycle turn.

FOR BOTH

Use 2017 as a proxy. **Coyote Logistics expects** 2020 to feel a lot more like 2017 than this past year. As you build out your strategy, leverage your historical supply chain data from 2017 to get a more realistic comparison. Stick with shipper and carrier of choice strategies. Don't try to time the market. Play the long game. Be transparent and share risk with reliable supply chain partners.

SOURCE: THE COYOTE CURVE Q4 2019 MARKET UPDATE & FORECAST



TRANSPORT COSTS INVOLVE MORE THAN THE BASIC FREIGHT RATE. BE AWARE OF ACCESSORIAL CHARGES FOR FUEL OR DETENTION THAT CAN ADD UP QUICKLY.

139, but shippers can press for a more favorable number. "From the dimensional weight divisor to surcharge costs to delivery discounts—it's all completely negotiable," says Dave Sullivan, director of pricing and analytics at Shipware, a San Diego-based firm that helps companies optimize their parcel contracts.

The key to gaining leverage with these carriers is to offer business they want ideally, large volumes of densely packed boxes shipping to densely populated areas—and be ready to defect to a competitor if you do not achieve favorable terms, Sullivan adds.

LOADS, MODES, AND TRANSPORTATION MANAGEMENT SYSTEMS

When the time comes to tender individual loads, shippers can save money by considering all options and using technology, such as a transportation management system (TMS), to make the best decisions.

Shippers that use the Cerasis Rater TMS, for example, can compare the cost of less-than-truckload (LTL) service with the cost of parcel service for a particular load. "When your load reaches about 175 pounds, it becomes interesting," says Adam Robinson, marketing manager at Cerasis in Eagan, Minnesota.

When shippers use LTL, the Cerasis Rater TMS classifies the load correctly based on dimensions and weight by integrating with an application called a dimensionalizer. This helps shippers provide accurate load information to carriers.



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Without this safeguard, the carrier's invoice may contain a different classification than what the shipper assigned. "The carrier could say, 'That class is way off, and I know you charged your customers for the total cost of this product plus *x* for freight, but it actually costs you more,'" Robinson says.

A TMS can also save money by ensuring that shippers tender loads to the right carriers and use the right transportation modes. When a company relies on humans to make routing decisions, the results can be costly. For example, an employee unnecessarily shipping a package via air rather than ground service could end up costing \$500 rather than \$200, says Phil Murphy, senior vice president of MCG Logistics. A TMS prevents such problems by forcing adherence to the company's routing guide.

FLEXIBILITY PAYS OFF

Although sticking to the guide is important, flexibility in tendering can also save money. Does your freight really need to hit the road during peak shipping times when tight capacity makes it hard to secure low rates?

"If you can have the load picked up earlier in the week, month, or quarter, odds are you would attract capacity differently than if you waited," says Al Reisman, executive vice president, specialized freight services at Landstar Transportation Logistics in Jacksonville, Florida.

Using a different mode—intermodal rather than truck, for example—can also save money. If you can't find a van, consider using a flatbed trailer. If a commodity needs to get somewhere in a hurry, consider reducing the volume of that commodity to avert trouble.

"Can you put two skids on an LTL truck and send them by an expedited service, and then manage the rest of the freight accordingly?" Reisman asks.

Third-party logistics providers can help shippers obtain lower rates by using LTL freight from several shippers to build full truckloads, or by using freight from more than one shipper to build continuous moves.



WHILE ADHERING TO A ROUTING GUIDE IS IMPORTANT, FLEXIBILITY IN TENDERING CAN ALSO CUT COSTS. IF POSSIBLE, AVOID PEAK SHIPPING TIMES WHEN TIGHT CAPACITY MAKES IT HARDER TO SECURE LOWER RATES.

Consider a carrier seeking to haul a load from Atlanta to Chicago. "The load we have today doesn't go directly to Chicago, but we have a load that goes to Cleveland, and from Cleveland we have a load that goes to Chicago," Reisman says. "We utilize those resources to manage that capacity."

Real-time market intelligence can yield savings as well. In addition to populating a TMS with contract rates, it is important to pull in rate data from other sources, such as brokers and digital freight marketplaces.

Shippers should configure the TMS to choose carriers on the spot market when they offer the best options. "Sometimes companies set up their TMS so rigidly around the contract rates that it doesn't allow that to happen," Reisman says.

Whatever rules you set for tendering loads, the reporting functions in a TMS can help you enforce them. "You can run a report that asks, 'How often did we comply with standard operating procedures and, when we didn't, what did that cost us?" says Robinson.

The software may reveal that instead of choosing the lowest-cost carrier, one employee in Houston gave loads to a friend, costing the company an extra \$1,000 that quarter.

After managing the cost of future shipments, companies can save money

by auditing their freight invoices or hiring a service to complete the task. For parcel shippers, one savings opportunity lies in identifying late deliveries.

Many parcel services guarantee that a package will arrive by a certain day or even a certain time. In theory, if a delivery is late, the shipper does not pay for it.

Unfortunately, parcel carriers often include language in their contracts that prohibits shippers from hiring firms to audit their invoices for late deliveries. "We've had a lot of success getting that language removed from contracts," Sullivan says.

MCG Logistics' TMS flags late deliveries when tracking parcels, allowing shippers to withhold payment if they haven't contractually waived that right.

Invoice-auditing services also search for freight or parcel charges that don't match agreed-upon rates. "We find rate failures all the time," Sullivan says.

An invoice may also contain unjustified accessorial charges. "Technology is so valuable because it can catch all that," says Murphy.

By paying careful attention to the details—in contract negotiations, tendering, and invoice auditing—and by thinking creatively about how they ship, companies can control transportation costs even when rates are on the rise.



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PLAN B: 5 WAYS TO WEATHERPROOF YOUR SUPPLY CHAIN

FROM ESTABLISHING SECONDARY SUPPLIERS TO SETTING UP ALTERNATIVE ROUTES, HERE'S HOW PLAN B STRATEGIES CAN KEEP YOU UP AND RUNNING, EVEN DURING EXTREME WEATHER EVENTS.

BY SANDRA BECKWITH

ou don't have to be Al Roker to know that the world is experiencing more frequent and severe weather events that impact supply chains.

In fact, "extreme weather events" are ranked as the top risk for likelihood as well as third in terms of impact, according to the World Economic Forum's Global Risks Report 2019. Just six years ago, this phrase wasn't even in the top five for either category.

Between 2016 and 2018 in the United States, the number of weather-related billion-dollar disaster events was historic-more than double the long-term average, reports the National Oceanic and Atmospheric Administration.

"North America historically has been viewed as a safe zone, but if you look at recent weather events, the security that companies had by keeping their supply chain close by is going away," says Bill DeMartino, general manager, North America, for riskmethods, a global supply chain risk management company.

The impact of extreme weather events isn't always short term, either. "We see

SEVERE WEATHER **CAN HAVE** LONG-TERM SUPPLY CHAIN IMPACTS. **CONTINGENCY PLANS** ARE CRITICAL.

the impact more in the aftermath," says Robert Boyle, vice president, NA managed logistics services for Connecticut-based Odyssey Logistics & Technology Corporation. "A localized issue often becomes regional and then national when capacity is disrupted."

As a result, weatherproofing the supply chain is now essential for shippers. Here are five ways to do that.

PLAN. THEN PLAN SOME MORE.

The goal for shippers is to be both proactive and reactive. Make sure you have access to the data that can help you plan-but be certain to have a plan, too.

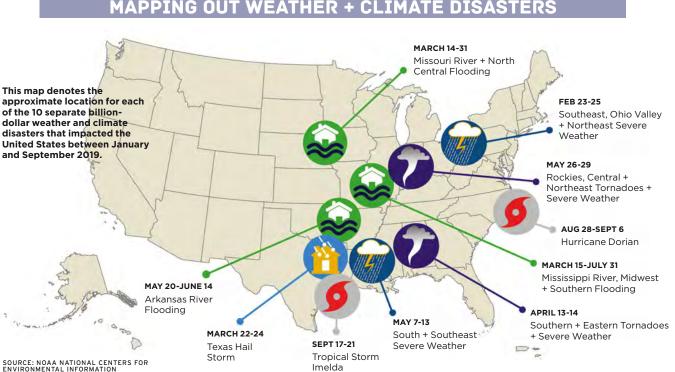
At a recent riskmethods summit, one customer detailed how it worked with the risk management company during Hurricane Florence in 2018. The

riskmethods system first identified 171 of the customer's supply chain nodessuppliers, ports, hubs—in the storm's path. As the forecast evolved in the following days, that number narrowed to 57.

The customer determined which suppliers in the storm's path were critical to its business. That knowledge, and a plan that specified responsibilities, tasks, and contingencies, minimized the storm's supply chain impact.

Even logistics service businesses need plans in place for their operations, as thirdparty logistics (3PL) provider Pilot Freight Services has seen more than once. For example, when Connecticut was hit by a freak but devastating snowstorm that wiped out power in nearly the entire state several years ago, the 3PL scrambled to find generators for its Hartford operation.

"Once we had generators, we could keep processes moving even though we didn't have heat or light for about five days," recalls Kim Gajewski, regional vice president. She adds that the facility now has a permanent-and powerful-generator.



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2 ALWAYS HAVE CONTINGENCY PLANS.

Having back-up options is essential, especially among manufacturers using a lean approach. "They don't have 10 to 20 days of stock like they used to," says Dennis Drinan, vice president, lead logistics provider, for DHL Supply Chain, Americas.

Using ocean freight coming to the United States from overseas under threat of an East Coast hurricane as an example, he says, "We might look at ways we can get that material off the vessel sooner—maybe pull it off in Montreal rather than wait for the Port of Savannah to return to normal."

For some shippers, contingency planning involves back-up suppliers, redundant inventory elsewhere, or shipping larger amounts ahead of storm season to make sure customers have an emergency supply.

BE STRATEGIC ABOUT CONTINGENCY PRODUCT PLACEMENT.

For some shippers, extreme weather contingency planning involves moving product and equipment away from the storm's path. For others, it's about bringing it closer.

Retailer Ace Hardware, for example, uses temporary warehouse space provided by FLEXE to move essential post-hurricane merchandise, such as generators, closer to regions typically in the path of devastating storms. It does the same with snow blowers in other parts of the country.

"There's enough predictability with this weather that Ace can temporarily move its goods where there will be



Ace Hardware uses temporary warehouse space to move essential post-hurricane merchandise, such as generators, closer to regions typically in the path of the storms.

HOW CHURCH'S CHICKEN WEATHERS THE STORM

Because most Church's Chicken U.S. restaurants are concentrated in the South, Midwest, and West where hurricanes, tornadoes, and flooding are increasingly common, we have a lot of experience with extreme weather risk management.

We know that to minimize the inevitable disruptions to our supply chain, we have to address it at all levels—with suppliers, distribution centers, and the restaurants

Church's Chicken is one of the world's largest chicken restaurant chains, with

1,500 locations in 29 states and 25

countries.

themselves. An intense storm might impact one of those levels, or all three.

For example, in 2017, Hurricane Harvey forced one of our distribution centers offline for several weeks and another offline for a shorter period, disrupted supplier shipments.

flooded or isolated numerous restaurants, and disturbed our supply chain to 300 restaurants. If we weren't prepared, this situation could have been devastating to our Texas operations. But it wasn't, because we've learned how to anticipate what might happen and have contingency plans in place.

We update our weather crisis playbook every spring before hurricane season starts on June 1. We make sure plans reflect lessons learned, that we've addressed personnel changes, and that we have updated contact information.

We rely heavily on data from the National Oceanic and Atmospheric Administration, using it to guide our communication and planning in areas likely to be affected. When a storm hits, we execute the plan, and we communicate—a lot.

I'm big on the three Fs: follow up, follow up, and follow up. You can have a great plan and execute well, but unless you communicate and follow up, things won't necessarily turn out the way you want them to.

Our suppliers know what it takes to be prepared, too. Our distributors often move their equipment and driver personnel out of the potential impact area so trailers aren't toppled by wind or other forces and unable to report to work.

It's important to recognize that it's not all about the food, though. Our people are part of our supply chain, and we make sure they're safe. We're in constant communication with stores in the path of a storm to make sure they shut down and send employees home before it's too late.

We get restaurants back up and running as quickly as we can. Sometimes, restoring operations is a community service. When Beeville, Texas, was devastated by Hurricane Harvey, we provided free meals to residents. Our companion "Pay What You Can" campaign gave those who wished to contribute to relief efforts a chance to do so. We ended up serving more than 2,200 meals and raising \$5,000 for the American Red Cross in that small community.

We know that it's not if the weather will disrupt our supply chain. It's where and when. Thanks to careful planning and good communication, we minimize the impact as much as possible.

> -By Steve Lash, Senior Director of Distribution & Logistics, Church's Chicken

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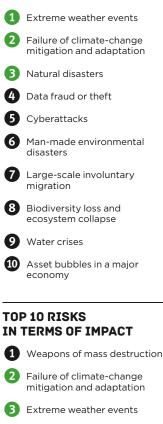
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GLOBAL RISKS: LIKELIHOOD & IMPACT

The World Economic Forum asked survey respondents to assess the likelihood of the individual global risk on a scale of 1 to 5, 1 representing a risk that is very unlikely to happen and 5 a risk that is very likely to occur. They also assess the impact on each global risk on a scale of 1 to 5 (1: minmal impact, 2: minor impact, 3: moderate impact, 4: severe impact, and 5: catastrophic impact).

TOP 10 RISKS IN TERMS OF LIKELIHOOD



- 4 Water crises
- 5 Natural disasters
- 6 Biodiversity loss and ecosystem collapse
- **7** Cyberattacks
- 8 Critical information infrastructure breakdown
- 9 Man-made environmental disasters
- O Spread of infectious diseases
- SOURCE: WORLD ECONOMIC FORUM GLOBAL RISKS PERCEPTION SURVEY 2018-2019

the greatest demand," says Megan Evert, senior vice president, operations for FLEXE, a Seattle-based provider of on-demand warehouse space and services.

4 LOOK TO THE CLOUD.

In large part because it's located near hurricane-prone New Orleans, hearing products manufacturer General Hearing Instruments has moved its systems to the cloud. With customers that include Walmart, Sam's Club, and HSN, the company uses a cloud-based e-commerce platform provided by supply chain systems integrator DiCentral. It also has online proprietary enterprise resource planning software for everything from accounting to inventory management.

Cloud-based systems and processes mean that should manufacturing need to relocate, even temporarily, employees can log in to the system from anywhere.

"In this new era of climate change, we need to ensure that our location can also change," says Robert Artigues, vice president of operations, General Hearing Instruments. "Our systems must be available no matter where we are."

"It's also not just the day of the storm when you have trouble," adds Gajewski. "We need to be able to work remotely using the cloud because it can take three or four days before things are restored."

HAVE YOUR TOOL CHEST STOCKED AND READY.

A number of companies, including riskmethods, offer risk management and threat assessment tools that marry weather data with supply chain information.

One advantage of using these, says Drinan of DHL, which offers a cloudbased platform called Resilience360, is that they can provide essential information about weather that impacts the supply chain in other parts of the world.

"We all know when there's going to be a hurricane in the United States, but if significant weather elsewhere in the world isn't a catastrophic event, we don't hear about it," he says.

Ongoing access to that information, combined with supply chain data, allows companies to see quickly if or where they need to take action.

For many shippers, risk management for weather-related disruptions isn't optional. "When the disruptions are measured by the number of suppliers affected rather than the number of individual events, the four most significant triggers in 2017 were hurricanes, extreme weather, earthquakes, and floods," explains the Global Risks Report 2019.

Just ask Al Roker.



Risk management and threat assessment tools such as DHL's Resilience360 marry weather data with supply chain information to help companies make informed decisions before their supply chains are disrupted.

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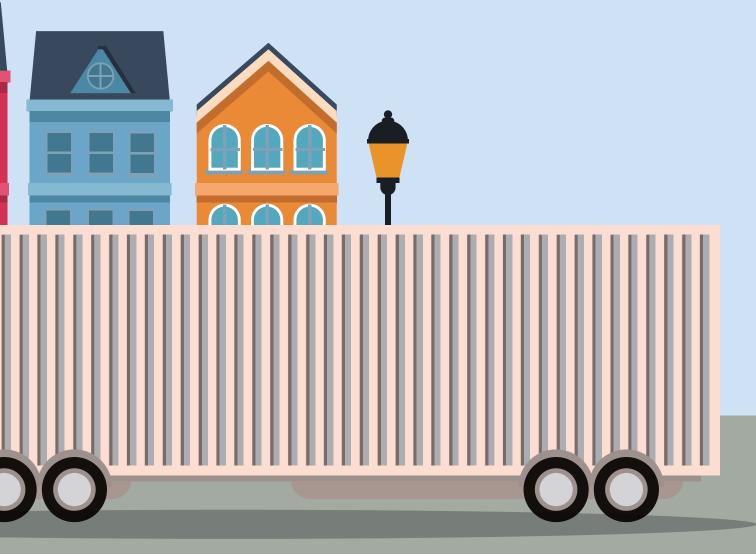
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INNING IOVES for the ILE T, **T**N

With direct sales on the rise, retailers seek fast and efficient ways to deliver product over the threshold and into customers' hands.

BY MERRILL DOUGLAS



What's so hard about last-mile delivery? That depends on what the customer buys, and where that order needs to go. Transporting a sweater to a ranch house is a different challenge than delivering a sofa to a walkup apartment, or a wide-format printer to an office tower.

But most last-mile deliveries share a common imperative: Customers ideally want their orders fast, shipped at no charge, and through transactions that involve no friction.

American shoppers spent 16.9% more on online purchases in the third quarter of 2019 than during the same period in 2018, according to the U.S. Census Bureau. The more growth we see in e-commerce and omnichannel sales, the more crucial the last mile becomes to a retailer's strategy.

Perfecting that strategy isn't easy, though. Buyers are pulling more and more shipments into the transportation network, and every retailer, parcel carrier, and third-party logistics (3PL) company feels pressure to speed up that volume.

"Being able to move orders faster through the system, and do it with some defense of margins, is crazy hard from a technical perspective," says Benjamin Conwell, senior managing director,



practice leader, newCommerce Advisory Group, Logistics and Industrial Services at commercial real estate brokerage Cushman & Wakefield.

NO SUCH THING AS FREE SHIPPING

While many customers expect fast transportation to cost them little—or nothing—transportation across the last mile obviously is not free, points out Josh Johnson, CEO at Fidelitone, a supply chain management firm in Wauconda, Illinois, whose services include last-mile delivery for large and bulky items.

That last-mile cost has gone up, due to a tight market for drivers. "Driver pay has been one of the largest increases—about 15% over the past three years," says Johnson. Fidelitone relies on both employees and independent contractors to deliver product from 15 dedicated last-mile fulfillment centers and 20 multi-tenant facilities.

The services those drivers provide depend on each customer's needs. Fidelitone works with retailers to define the kind of last-mile services they want, then trains drivers to meet those expectations. The company also plans carefully, allotting enough time to make each delivery to a home or business and perform related services, such as unpackaging furniture or setting up office equipment.

"It's about addressing that experience and expectation up front, and making sure you've got the right cost built in to do that," Johnson says. To help make everything run smoothly, Fidelitone has implemented technology that optimizes schedules and routes.

Since drivers deliver a wide variety of products into a range of different environments, this planning is a neverending challenge, Johnson adds.

Variety is also the order of the day for XPO Logistics, a provider of lastmile services based in Greenwich, Connecticut. "Each product requires its own special accommodations, so

SATISFYING CUSTOMERS THE 3PL WAY



3PL companies such as XPO Logistics prioritize the consumer experience when delivering the last mile. XPO enables consumers to track orders, set personalized alerts, and reschedule deliveries electronically.



Many retailers use third parties such as Fidelitone for last-mile delivery to ensure customer satisfaction.

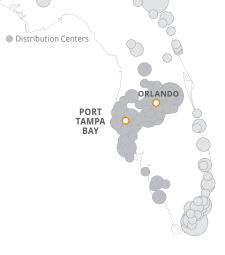
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BRINGING IT ALL BACK HOME

Build.com, an e-commerce vendor of home improvement products from plumbing and lighting to hardware and appliances, delivers orders to the customer's door, often providing white-glove services such as unpackaging furniture.



all deliveries are handled personally and case by case," says Daniel Walsh, president, last mile, at XPO.

When a consumer completes an online purchase from one of XPO's customers, that triggers an intricate planning process so everything will be ready when the product arrives from farther up in the supply chain.

"Once a product arrives at one of our 85 hubs, we work with the consumer to set a time and date that suits them for delivery," Walsh says. "After the product ships, consumers can track or reschedule orders with Alexa or Google Home."

XPO pre-packages and pre-assembles products so drivers can deliver and install quickly and cleanly. "Our technicians perform about 500,000 assemblies and installations annually, including plumbing, gas, or Wi-Fi," Walsh says.

Like service partners such as Fidelitone and XPO, retailers that manage their own last-mile transportation often use advanced technology to create efficiencies and track the progress of deliveries. One of those retailers is Build.com in Chico, California, an e-commerce vendor of home improvement products.

Build.com is a unit of Ferguson Enterprises, a distributor of plumbing, HVAC, lighting, and related products. Shipments to its customers often start in one of 10 Ferguson distribution centers throughout the United States, or they come as drop shipments from any of about 400 other vendors.

Build.com uses UPS and a variety of less-than-truckload (LTL) carriers to transport orders to homes, businesses, or job sites. In some cases, drivers deliver product to the customer's door; in others, they provide white-glove services such as delivery to the room of choice.

For LTL shipments, Build.com uses Convey, a last-mile delivery management solution, to choose the optimal carrier. "We pass that information to the Ferguson DC where the order is going," says Jake Velikonia, the company's senior director of operations. A drop-ship vendor logs into a Convey portal to get information about a new order and the carrier that Convey has selected. "Then they just download and print all the bill of lading information for the warehouse," he says.

SOFTWARE FOR THE LAST MILE

Convey, based in Austin, Texas, offers software modules to address three main functions in last-mile logistics. First, it lets a retailer promise a delivery date on a product page or online shopping cart. Retailers may also set delivery appointments for large items.

Second, the software recommends the most effective carrier for a given shipment. "Many smaller retailers use between three and six carriers," says Rob Taylor, Convey's co-founder and CEO. "But in the case of large omnichannel retailers, we have customers that use 40 carriers on our platform."

Third, Convey receives electronic status updates from all its customers' carriers, analyzes that data to detect potential delivery problems, and then takes action on that information.



TECHNOLOGY CREATES EFFICIENCIES AND TRACKS PROGRESS OF LAST-MILE DELIVERIES.

For instance, Convey might intercept a carrier's exception code indicating that a shipment has been damaged. "That kicks off an automated process for a few of our customers," Taylor says.

First, the system notifies the retailer of the damage, even if the carrier hasn't yet done so. "That then automates a reship of a replacement product from the retailer, as well as a customer communication through email and SMS," he says. The message could, for

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OPTIMIZING THE DELIVERY EXPERIENCE

Convey's delivery experience management platform helps retailers optimize the last mile. It also improves the customer experience by providing in-transit and delivery data in real time.

example, tell the customer that damage has occurred but a new product will arrive by the original delivery date.

For Build.com, one big challenge Convey has helped to solve is how to update customers on the status of incoming shipments. Before Convey, the retailer simply gave each customer a link to a carrier's tracking page. That made for a confusing experience.



FULFILLMENT CENTERS PROVIDE A GROWING STRATEGIC VALUE.

"The process was different on every website," Velikonia says. "Customers had to log in to multiple places."

To provide a simpler, more consistent experience, Convey established a link with each of the merchant's LTL carriers to pull in tracking information. "They standardize all the different messaging," Velikonia says.

Customers now track all deliveries

through Build.com's own site. "It's always the same look, always the same messaging," he adds.

PROXIMITY RULES

As software can provide an edge in the last-mile competition, so can a welldesigned network of fulfillment centers. "There has never been more strategic value attached to where to locate these kinds of facilities," Conwell says.

Retailers look for several things when they choose fulfillment sites. "One, proximity to customer density is paramount so it's feasible to do sameday delivery," says Conwell. To ensure adequate coverage, retailers or their logistics partners may open multiple facilities in certain markets.

When choosing a site in a city center, a retailer might renovate an existing industrial building, or it might demolish that building and construct a replacement from scratch. That choice could add 18-36 months to the project, but it lets the retailer develop parking, dock doors, and other features to its own specifications.

Whichever choice it makes, the retailer must understand how traffic congestion in the neighborhood will affect its own operations, and whether traffic in and out of the facility will violate local zoning law. And, as with any high-volume operation, the retailer must understand the local labor market. An urban market offers a large pool of potential employees, but commuting could be a problem. "Is there on-site or off-site parking for workers?" Conwell asks. "Is there adequate public transportation?"

Traffic and parking at last-mile facilities are so important that the trend today is toward smaller buildings surrounded by acres of asphalt. The facility needs lots of parking space for associates' vehicles and delivery trucks.

"Almost as important, though, is to have room to properly circulate traffic on the site, so you can have ranks of delivery vehicles being filled and then heading off the site," Conwell says.

In a few cases, those circulation lanes include ramps that lead to multistory final-mile facilities. For example, Conwell points to the 590,000-squarefoot, two-story facility that developer Prologis recently built in South Seattle, leasing space there to Amazon and Home Depot. "It's a harbinger of things to come," he says, adding, however, that the multistory concept is still largely unproven.

For omnichannel retailers, buy online, pick up in store services may help take pressure off last-mile operations. "The more orders customers pick up at the counter or at the curb, the fewer orders the retailer needs to run through a finaltouch facility," Conwell says.

Given the ongoing growth in direct-tocustomer sales, though, merchants will continue to hone their last-mile strategies for the foreseeable future.

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SMALL BUSINESS STRATEGIES WITH BIG PAYOFFS

SUPPLY CHAIN RISKS WORTH TAKING

плининини

From technology investments that stretch budgets to supply chain partnerships that share proprietary information, these moves may give small businesses pause. Here's why they should dive right in.

BY KAREN KROLL

TOP CHALLENGES FOR SMALL BUSINESS OWNERS





TIME MANAGEMENT

RECRUITING AND RETAINING EMPLOYEES





6% other

SOURCE: GUIDANT FINANCIAL AND LENDINGCLUB, 2019 SMALL BUSINESS SURVEY

CHOCOLATE PIZZA COMPANY

STABILIZING ITS CHOCOLATE

STARTED SMALL BUT WON

BIG BY GAMBLING ON

SUPPLY CHAIN.

t Chocolate Pizza Company, a gourmet chocolate gift company, quality Swiss-style choc-

olate is the "linchpin in our supply chain," says Ryan Novak, owner of the Marcellus, New York-based company. "Any disruption in this commodity could seriously jeopardize our small business."

When Novak purchased the business in 2010, he bought chocolate as needed because finances were tight and sales modest.

That meant he typically paid premium prices for both chocolate and delivery.

Sales quintupled in three years. A sweet shift, but the practice of buying chocolate just in time limited response times for large orders and cut into margins.

Still, the economy remained sluggish and continued growth wasn't guaranteed. Novak had to decide whether he and his team could grow sales fast enough to cover the investment needed to procure larger quantities of chocolate. Similarly, could he negotiate cost reductions significant enough to allow Chocolate Pizza Company to become more competitive and pitch to higher-volume customers?

Novak decided they could. "We went from buying about 20,000 pounds of chocolate annually to more than 100,000 pounds," he says. The next step: upgrading equipment so they could efficiently use the larger inventory. And after that, "we had to go sell," Novak says.

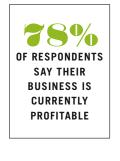
Sell, they did. "In a short window, we went from small-town chocolate shop to emerging brand

with national sales," he says. As costs dropped, Chocolate Pizza was able to capture business from major companies, including CVS, BJ's Wholesale Club, and HMS Host. The decision to procure a larger volume of chocolate set in motion additional investments that accelerated production capacity and fueled greater growth. "But the key was gambling on stabilizing our chocolate supply chain," Novak says.

When thoughtfully evaluated and executed, supply chain moves that contain some risk can propel small shippers to greater growth and success. Here are a few risks to consider taking.

MOTIVATION FOR OPENING A BUSINESS





SOURCE: GUIDANT FINANCIAL AND LENDINGCLUB, 2019 SMALL BUSINESS SURVEY

TOP 5 SMALL BUSINESS INDUSTRIES

I I %0		
BUSINESS S	SERVICES	

II% FOOD/RESTAURANT

10% HEALTH/BEAUTY/FITNESS

> **7%** GENERAL RETAIL

6% Home services



Of the nearly 295,000 companies that exported from the United States in 2015, 97.6% were small to mid-sized businesses (SMBs), according to the Small Business Administration. These SMBs accounted for nearly one-third of the \$1.3 trillion in exports that year.

Exporting not only opens a small business to additional markets, but it can boost their sustainability by diversifying revenue.

The thought of exporting may appear daunting, especially to an SMB that lacks the resources to dedicate multiple employees to international operations. Several steps can help.

One is setting aside time to assess the market: Where will your product fit? Who are potential competitors?

Another step is estimating the impact on the supply chain and operations. For instance, does it make sense to find suppliers within the market to which you're exporting? What duties and taxes will apply?

Knowledgeable partners can provide shippers with assistance and advice on exporting. This might be a third-party logistics (3PL) provider, a university professor, and/or an agency such as the U.S. Commercial Service, which is the trade promotion arm of the U.S. Department of Commerce's International Trade Administration.



INVEST IN AGILITY

Investments that boost an SMB's agility and allow it to quickly respond to customers can pay off. "Agility is where SMBs can differentiate," says Peter Bolstorff, executive vice president of the Association for Supply Chain Management, a trade group.

Consider Artaic, a Boston company that designs and fabricates custom tilework, creating mosaics from glass, porcelain, and stone. The best tile materials come from various locations worldwide; little is produced in the United States. Artaic's supply chain extends to about one dozen suppliers on three continents.



INVESTING IN AN INVENTORY ORDERING SYSTEM HELPS ARTAIC ORDER TILES BEFORE THEY ARE NEEDED TO PRODUCE CUSTOM MOSAICS.

At the same time, shorter lead times help Artaic win business. However, every project is custom, eliminating inherent predictability in the company's tile consumption. "Since our supply chain is global, inbound shipments can easily take three months including production times and sea freight transport," says Ted Acworth, Ph.D., founder and CEO of Artaic. Given the tiles' weight, air freight tends to be cost prohibitive.

To achieve four- to eight-week lead times, Artaic worked with the University of Massachusetts, Amherst, for four years to develop a predictive inventory-ordering scheme. To help cover the cost, Artaic applied for and received a National Science Foundation Research grant, which helped support a Ph.D. student and faculty advisor.

With its new system, Artaic can order tile regularly, and before it sells its mosaics. Once a mosaic sells, Artaic likely will have all or most of the needed tile feedstock in house. "We've vastly increased our tile availability percentage, utilizing low cost and environmentally more favorable ocean shipping instead of air shipping," Acworth says.



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- ▶ Interstate 40, exit 96 Distance: 500 ft
- ▶ Sale price: \$40,000/acre



STATESVILLE BUSINESS PARK:

- ► 44.25 acres, Smart Sites qualified
- ► US-70 (0.41 mi); I-77 (5.24 mi)
- ► Sale price: \$27,500 per acre



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BUILD SUPPLY CHAIN TALENT

It's not just systems and technology that are critical to supply chain effectiveness. People are, as well. Yet some smaller shippers hesitate to invest in strong supply chain talent.

"They often look at supply chain as a cost center, not an area where they can build a competitive advantage," says Eric Dunigan, president and co-founder of Arrive Logistics.

Qualified supply chain professionals, however, are key to helping a small organization leverage its supply chain to better compete. Annie and Michael Murphy own Eco Relics, a Jacksonville, Florida-based company that reduces landfill waste by reclaiming wood and salvaging usable building materials and then selling them. Eco Relics also offers antigues, hardware, and other items.

The Murphys recently invested several hundred thousand dollars in equipment, including mammoth saws, a drying kiln, and a slab planer. These tools will allow them to more efficiently produce wood slabs

that they get from local tree services, trees felled after a weather event, and other sources. "There's an art to using reclaimed wood," Michael Murphy says, noting that the sizes and shapes are unpredictable, unlike the wood sold in big-box stores. And

CONSIDER VERTICAL INTEGRATION

without the kiln, slabs can take the better part of a year to dry and are more vulnerable to bugs.

The investments were substantial ones for the sixyear-old business. However, the equipment not only helps Eco Relics further its goal of repurposing wood and other building materials, but the vertical

integration provides a supply chain competitive advantage.

"There are millions of antique and building supply stores," Michael Murphy says. The market for recycled and upcycled wood and building and other materials "is a niche market but a fairly big niche," he adds.

Moreover, few companies are vertically integrated and thus can meet demand with the speed Eco Relics now can offer. Say a storm knocks down a tree in a homeowner's yard, and they would like to use the wood to make a bookshelf. "We can take it from log to finished furniture," Annie Murphy says. "This makes us stand out."

"In today's market, it is essential for businesses to reframe customer empowerment as an opportunity to offer additional value and create a more intimate and trusted relationship," notes Darren Cockrel, president of UPS Global Logistics and Distribution.



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co-founder of Arrive Logistics. The result? Their supply chains often strain and then break as the business scales.

Strong partners, whether 3PLs, consultants, academics, or others, "can give SMBs the reach and resources that they might not otherwise have," Dunigan savs. SMBs are better able to leverage their own capabilities and spend more time on their businesses.



DEVELOP STRONG RELATIONSHIPS WITH A FEW CUSTOMERS

The idea that an SMB should diversify its customer base, whether through exporting or other tactics, certainly holds merit. If one client runs into trouble, the business is less likely to lose a major portion of its revenue base.

At the same time, successful SMBs often concentrate on a handful of customers. This approach allows the business to focus its time and attention on a few key relationships, rather than manage multiple smaller ones.

As important, an SMB often can tap into the operational expertise of its key customers, many of whom are likely to be larger and more established. "Customers can advise on selecting suppliers, managing quality, moving forward with innovation, and improving fulfillment and delivery," says Mikaella Polyviou, assistant professor of supply chain management at Arizona State University.

The SMB also needs to monitor the relationship and the customer's financial performance, so it can stay abreast of any potentially troublesome changes.



PLAYING IT SAFE

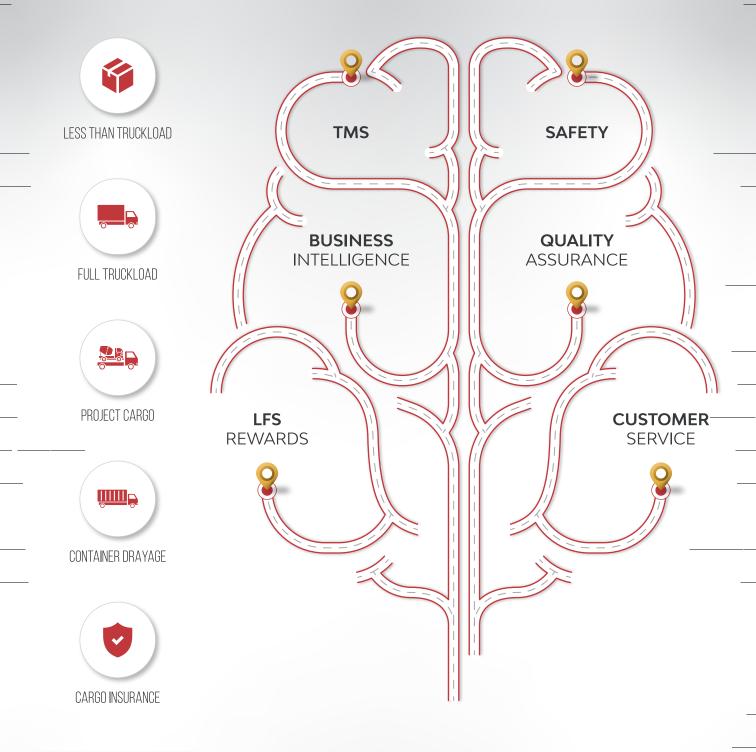
While making moves that contain some risk can pay off, preparation and research are key. "Take time to ask questions, connect with trusted industry peers, and conduct your own research to reduce potential business risks," says Darren Cockrel, president of UPS Global Logistics and Distribution.

As part of the analysis, weigh total lifecycle costs against the estimated impact to revenue. Identify potential issues that could arise, and how the decision is expected to help the business execute on its strategic business goals. If the investment will require a heightened sales effort or a change to operations, how can the organization achieve that?

SMBs can also mitigate risk by using tools that provide additional control. For example, digital systems enable businesses and their customers to track and manage shipments in real time, so they can respond quickly to deviations from plan.

Finally, it's rarely necessary to tackle an entire project at once, says Peter Bolstorff, executive vice president of the Association for Supply Chain Management. It's often just as effective and more prudent for SMBs to break a project into smaller components, complete one or two, assess, tweak where necessary, and then move to the next phase.

"Think big, start small, and scale fast," he says.





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THIRD-PARTY LOGISTICS PROVIDERS ARE BUILDING FUTURE-PROOF SUPPLY CHAINS, FILLING THEIR TOOLBOX WITH BUSINESS INSIGHTS, PREDICTIVE CAPABILITIES, AND OTHER NEW SOLUTION SETS.

BY KAREN KROLL

Burlap & Barrel provides quality, single-source spices for chefs and home cooks. And while its two co-founders remain the sole employees, the three-year-old company has acquired a national customer base. "We're still a tiny company, but through our thirdparty logistics (3PL) provider, we can send out thousands of orders without having to hire additional people," says co-founder Ori Zohar.

Until recently, many 3PLs focused on managing their clients' transportation partners, contracts, and expenses. "It was primarily a cost play," says Paul Thompson, founder and chair with Transportation Insight (TI), a 3PL based in Hickory, North Carolina.

While managing transportation contracts and shipping arrangements remains core to many 3PLs' businesses, it's no longer the differentiating factor it once was. Instead, 3PLs' abilities to offer supply chain solutions that provide business insight and help drive process improvements and boost efficiency has become "wildly more important," Thompson says.

This might mean helping shippers optimize their transportation network by identifying the most effective routes, and/or calculating the optimal mode(s) for different products.

The providers that offer these capabilities are expected to propel the global 3PL market at a compound annual growth rate of 7.5% between 2019 and 2025, according to Grandview Research, which values the current market at \$727 billion.

ANALYTICS

A nalytic capabilities have become a critical technical offering for 3PLs. Nearly all—95% of shippers and 99% of 3PLs—responding to the 2020 Third-Party Logistics Study, published by Infosys Consulting, Penn State University, and Penske Logistics, say analytics are a necessary element of 3PL expertise.

By leveraging analytics, 3PLs can help shippers optimize their distribution networks. "With strategic network configuration, it's possible to move products closer to end customers to reduce transit time and cost," says Perry Belcastro, senior vice president with 3PL Saddle Creek's fulfillment services.

Analytics can also help shippers leverage postponement strategies and delay product customization as long as possible, so they can respond more adeptly to customer demands.

John, a logistics manager with a manufacturing company, asked his organization's 3PL to provide a more detailed analysis of the route company's freight and its total spend.

"We now have better information about our supply chain readily available," he says. With this information, he and his team can better determine where they can improve operations.

The analytic and supply chain solutions offered by some 3PLs can also help automate freight matching. "What is today a manual, laborious process—managing transportation service—will become highly automated," Thompson says. To be sure, some intermediaries will still be needed, particularly for specialized or complicated loads. But they'll likely make up a smaller portion of the market.

Taking their place? "Digital freight matching has been a major focus for the past several years," says Joe Couto, COO with HighJump and Körber Logistics Systems. Sometimes called "Uber for freight," digital freight matching refers to technology that automatically matches loads with trucks without human intervention.

The digital freightmatching sector has attracted more than \$180 million in venture capital investment since 2011, according to Armstrong & Associates research.

More work around analytics remains. At present, little more than one-quarter of both shippers and 3PLs are satisfied with current analytic capabilities, finds the 2020 3PL study.

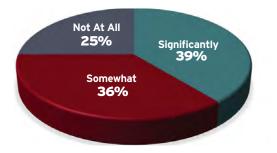
One improvement that would help both 3PLs and shippers is the "neutralization" of technology, says Robert Voltmann, president and CEO with the Transportation Intermediaries Association (TIA), a trade group. That technology would enable 3PLs to take information from a carrier and present it to a shipper, no matter which systems each is using.

A TIA technical committee is working on this, Voltmann adds.

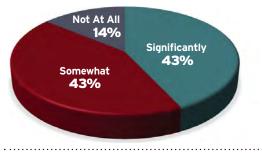
INVOLVEMENT WITH ANALYTICS TO SUPPORT PLANNING OR OPERATIONS

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PERCENT OF SHIPPERS INVOLVED WITH 3PLs



PERCENT OF 3PLs INVOLVED WITH SHIPPERS



AREAS IN WHICH USE OF ANALYTICS IS MOST HELPFUL FOR IMPROVEMENT

TYPES OF PROBLEMS	% SHIPPERS	% 3PLS
On-Time + Complete Order Fulfillment	69%	66%
• Shipment Visibility	63%	65%
Freight Costs per Shipment	60%	65%
• Transit Time	59%	55%
Cost to Serve	58%	65%
Order-to-Delivery Cycle Time	58%	63%
• Flexibility + Adaptability	47%	54%
Inquiry Response Time to Shippers	28%	40%
Sustainability: Use of Approved Carriers	24%	29%
Damage-Free Shipments	23%	22%

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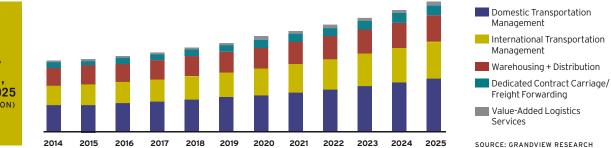


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UNITED STATES 3PL MARKET SIZE, BY SERVICE, 2014-2025 (US\$ BILLION)



BOOSTING VISIBILITY

Any 3PLs today offer technology that provides visibility across multiple departments, says Robyn Meyer, partner in enterprise logistics, Transportation Insight (TI). These supply chain solutions help companies better compete.

Meyer provides an example: An e-commerce firm was holding frequent flash sales of a specific product. TI assessed the product's true cost, including expenses from all departments.

The analysis showed that every time the company sold the item, it lost money. The product's size drove up shipping costs and its high breakage rate increased the calls to customer service.

"We used technology to provide visibility to all areas," Meyer adds.

IOT & REAL-TIME TRACKING

Between 2018 and 2024, the global Internet of Things (IoT) within the logistics market is forecast to grow at a compound annual rate of 13.6%, according to Research and Markets.

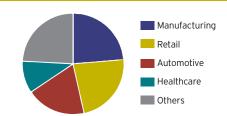
Some 3PLs already are leveraging IoT. BOA Logistics, a refrigerated LTL shipment specialist, recently worked with Tive, an in-transit supply chain tracking technology provider, to implement a solution that gives BOA visibility to the temperature and locations of all its truckloads. The solution also allows the company to check delivery times and justify any detention charges.

BOA can also pair weather information with Tive's GPS data to quickly decide whether it's necessary to reroute or change a shipment.



TAPPING INTO 3PL TECHNOLOGY THAT PROVIDES VISIBILITY AND BOOSTS REAL-TIME TRACKING CAN HELP COMPANIES BETTER COMPETE.

2018 GLOBAL THIRD-PARTY LOGISTICS MARKET SHARE, BY END USE (%)



The manufacturing sector held the largest 3PL revenue share in 2018, finds Grandview Research. The retail sector is expected to grow as retailers adopt 3PL services for data-driven analytical solutions. Demand for 3PL services in the automotive sector is also poised for considerable growth as automakers spin off their internal logistics departments and distribution networks in the wake of adopting 3PL services.

TARIFFS & FINANCE

The broader economic and geopolitical environment influences shippers' supply chains, given that many begin in one country and end in another.

While many shippers about 70%, according to the 2020 Third-Party Logistics Study—internally manage the impact of global political decisions, 19% turn to their 3PLs. Another 20% aren't managing it at all.

When it comes to tariffs and geopolitics, "Typically, one of the first questions customers ask is, 'How are others handling this?'" says Sean Coakley, senior vice president, Kenco, a 3PL based in Chattanooga, Tennessee.

GREEN MEASURES

Regulatory requirements, public perception, and cost savings are prompting both shippers and 3PLs to make sustainability a focus of their supply chain solutions, the 2020 Third-Party Logistics Study reports.

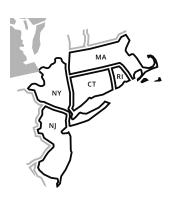
To achieve this, 3PLs are turning to a mix of solutions, including tools that optimize routes and loads; voluntary programs like the EPA's SmartWay; tools to track and report emissions; and the use of alternative fuels.

Eventually, some 3PLs will likely offer discounts on delivery schedules that combine orders and take slightly longer, but impose fewer environmental costs.

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ROBOTICS & Blockchain

Robots can help 3PLs address the labor challenges and space constraints many companies face, particularly in North America.

Not only are many robotic solutions less expensive than both the ongoing cost of employees and larger, automated handling systems, they can offer the flexibility and scalability 3PLs and shippers need to respond to demand fluctuations typical with e-commerce. They can also help 3PLs boost the efficiency of their employees.

"Robotics' value proposition is savings, accuracy, and capital avoidance," says Jeff Cashman, COO with GreyOrange, a software and mobile robotics provider.

While Cashman has an incentive to tout the value of robotics, others feel similarly. The number of robotic logistics systems sold jumped 60% between 2017 and 2018 to more than 271,000 units, according to World Robotics 2019-Service Robots, an International Federation of Robotics report. These systems accounted for 41% of professional service robots sold.

Blockchain, which offers a transparent, immutable record of transactions, also shows promise as part of the supply chain solutions 3PLs offer. "I see it coming within the next few years, especially in more managed, regulated environments, such as food," says Kenco's Coakley.

One challenge that will need to be addressed before blockchain becomes ubiquitous is that it currently exists on private, permissionbased platforms.

"If the companies don't let competitors join their platform, multiple blockchain solutions will develop," says Couto. Shippers will need to join several platforms, leading to a fragmented, more complicated environment.

VALUE-ADDED SERVICES

While the technology and expertise offered by 3PLs remain critical, service is just as important.

When Burlap & Barrel had grown enough that filling orders in the co-founders' apartments was no longer viable, Zohar talked with a range of 3PLs, including some whose supply chain solutions handle all aspects of logistics, including fulfillment, returns, and rapid delivery. "It was compelling because we're not fulfillment experts," he says.

The downside? "You have to fit into their machine," Zohar says. For one, Burlap & Barrel would have had to invest in special barcodes, as well as special wrapping for the glass jars it uses to ship spices. "Fulfillment costs would be through the roof," Zohar says.

Moreover, Burlap & Barrel strives to provide customers "an experience," Zohar adds. When customers buy spices online, they can't smell, touch, or taste their purchases. So, when they receive their packages, opening it "has to feel like a gift," he says. Burlap & Barrel found a 3PL that provides white-glove service when packing the spices.

Flexibility has also been key. For instance, if Burlap & Barrel receives a shipment of jars that it won't need for several months, its 3PL will store them.

The emphasis on customer experience is likely to intensify as millennials—those born roughly from the early 1980s until about 2000—and members of Gen Z—those born starting in the late 1990s—gain shopping power. After all, they've grown up in an era when they could order just about anything from their phones and find it on their doorsteps hours later.

Sales channels will continue to blur. "We're likely to see the expansion of omnichannel, third-party marketplaces like Amazon, subscription box services, and social commerce," says Belcastro. These shifts will continue to boost the complexity of fulfillment operations.

Supply chains increasingly are like orchestras, Meyer says, quoting a speaker on the topic. "Everyone plays their own part, but without doing it together, there's no music," she says. "That's where 3PLs can help."



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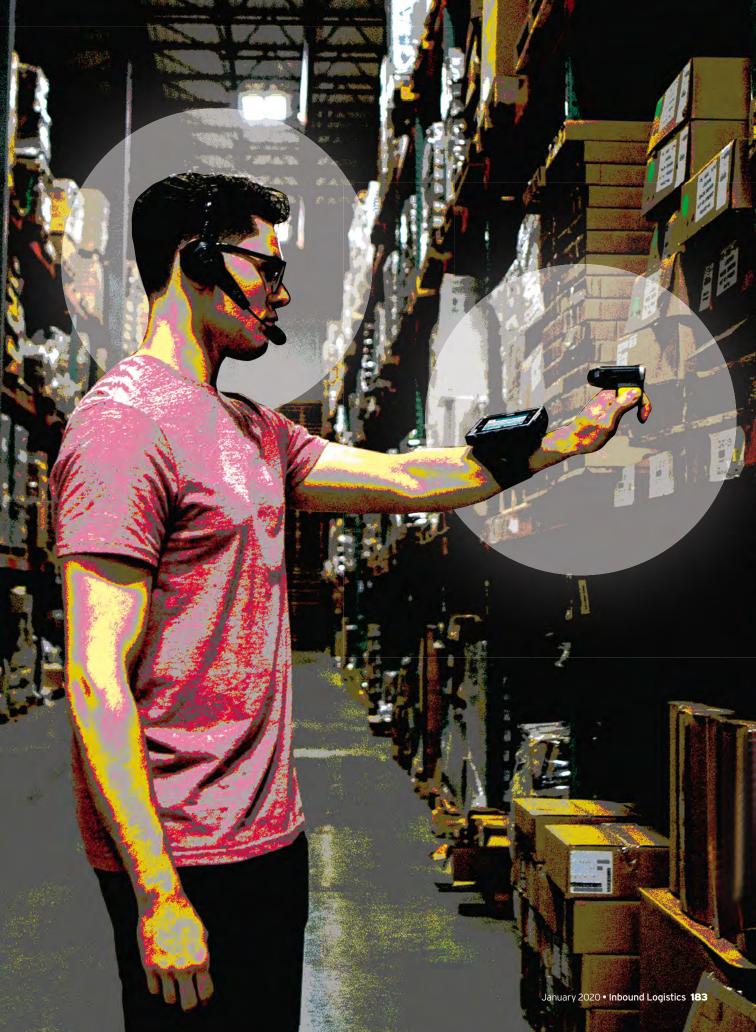
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BY SANDRA BECKWITH



rt Eldred recalls sitting in the audience at a recent industry conference session listening to a major department store chain executive talk about the importance of data analytics to e-commerce inventory strategy.

"He talked about a consumer in Atlanta ordering a tie online. Should the retailer ship the tie from a local store, the nearest warehouse, or its Manhattan store, which has an overabundance of ties that they'll have to mark down?" says Eldred, client executive, systems engineering, at systems integrator VARGO in Ohio.

"E-commerce strategy used to be about just transportation," he adds. "Now, transportation, delivery time, and profit factor into the analytics."

All these factors combine with

INNOVATING WITH ACRONYMS

Logistics loves acronyms. Here are some in e-commerce fulfillment.

AMR

Autonomous Mobile Robot

A G V Automated Guided Vehicle

OMS Order Management System

TMS Transportation Management System

V D W Voice-Directed Warehousing

WCS Warehouse Control System

WES Warehouse Execution System

WMS Warehouse Management System

Y M S Yard Management System



Jane Kennedy Greene, chairwoman of the board at Kenco Logistics, tests a Raymond Virtual Reality Simulator at the grand opening of Kenco's Supply Chain Innovation Test Lab.

ongoing, explosive e-commerce growth and a labor shortage to drive continual innovation in warehouses coast to coast. Many of the innovations relate to three areas: technology, equipment, and warehouse size and layout.

Lack of labor, or increasing competition for existing labor in distribution center-dense markets such as Ohio and Florida, is forcing warehouse operators to adopt technology that can supplement work done by humans.

A FEW YEARS AGO, EFFICIENCY WAS THE DRIVING FORCE BEHIND WAREHOUSE INNOVATION. TODAY, IT'S GETTING PRODUCTS OUT THE DOOR AND DELIVERED QUICKLY DESPITE A LABOR SHORTAGE.

"Four years ago, innovation was about how to become more efficient," Eldred says. "Today, a lack of labor while trying to get volume out the door and delivered is driving innovation."

Some of this innovation comes in the form of automated guided vehicles such as "Chuck" from 6 River Systems in Massachusetts. Chuck and other vehicles like it act as "cobots," navigating warehouse floors alongside staff to improve order-picking efficiencies. But Chuck does more than just transport bins from pickers to packing stations so employees do less walking and are more productive. Chuck is a "thinking" member of the warehouse team.

"Chuck takes advantage of artificial intelligence to develop the most efficient pick path," explains Fergal Glynn, vice president of marketing, 6 River Systems. Chuck's cloud-based software also uses artificial intelligence to spot trends that

can help optimize inventory placement in a facility.

That's not to suggest that there's a robot in every warehouse, though. Glynn says his company's technology isn't yet widely adopted, although he believes that companies are slowly becoming less skeptical.

Supermarket chain Kroger is anything but skeptical. The company recently announced the location of its fifth automated robot warehouse to fulfill online grocery orders. Kroger plans to open a total of 20 of these warehouses that use digital and robotic technology in partnership with UK online grocer Ocado.

Even so, Kroger is atypical. "There's a lot of good warehouse technology out

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there, but many companies are standing on the sidelines, still apprehensive about it," says Russell Wells, director of business development at third-party logistics provider Kenco Logistics.

That apprehension is one reason Kenco introduced a Supply Chain Innovation Test Lab in October 2019. The facility, located at the company's Chattanooga, Tennessee, headquarters, evaluates and assesses new technologies outside of a live operation.

YOU WEAR IT WELL

Innovations continue in wearable technology as well, including finger scanners, wrist screens that display instructions, and headsets for voice-directed picking, putaway, and replenishment.

"These innovations leave workers with both hands available to scan, verify, and collect," explains Mark Wheeler, director of supply chain solutions for Zebra Technologies Corporation in Illinois.

More companies are also analyzing data gathered by increasingly sophisticated software to generate a perfect order report.

"Rather than run inbound, outbound, and order fulfillment rates, companies want to know more about orders where everything went right," says Tom McFadden, a partner at Columbus Consulting. "Cost per order isn't the best metric, because reducing that cost won't produce the perfect customer experience. Take care of customer service and cost will take care of itself."

INNOVATIVE MATERIALS HANDLING EQUIPMENT HELPS Warehouses pick and pack More Efficiently, and in Smaller spaces.

There's innovation in materials handling equipment as well, whether it's forklifts, conveyors, or racking products. This equipment not only needs to help facilities pick and pack more efficiently, but it has to do so in smaller spaces.

2020 TRENDING TECHNOLOGY

Looking for the latest technology offerings to help you fill and manage e-commerce orders quickly, efficiently, and safely? Here are some new solutions currently being deployed.



DRONES FOR INVENTORY MANAGEMENT

Drone software company FlytBase has introduced FlytWare for aerial inventory auditing. It combines software with off-the-shelf drone hardware for automating inventory counts in warehouses, distribution centers, and warehouse clubs.

WIRELESS HEAVY EQUIPMENT BATTERY CHARGING

Wireless induction charging for forklifts and automated guided vehicles from companies including Delta Electronics eliminates cables and connectors. It's quicker and more efficient than traditional battery charging methods.

"HEAD'S UP" HEAD-MOUNTED DISPLAY

Zebra Technologies Corporation's new optical display projects information or instructions within the user's real-time field of view. Built into safety glasses, the technology keeps the display at eye level so the user doesn't have to look down at a wrist-worn or handheld display. The head-mounted display improves accuracy, efficiency, and safety.



"Companies are shifting to smaller facilities closer to customers," says Brian Neuwirth, president of UNEX Manufacturing, a picking solutions company. "These facilities hold the same merchandise as larger warehouses, but in smaller quantities."

UNEX's SpeedCell high-density storage product responds to this trend by optimizing storage space within racks. Vertical storage units suspended from steel tracks can compress 200 feet of rack or shelving into 40 feet of storage space with more pick facings and greater SKU density.

As fulfillment space requirements grow in environments that also ship high volumes on pallets, there's an increase in the number of conveyors moving goods from high-volume sections to the e-commerce fulfillment area.

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FINDING SPACE OUTSIDE THE WAREHOUSE

Warehouse demand has outpaced development for four years while the U.S. warehouse vacancy rate decreased to 4.4% in the first quarter of 2019, according to CBRE Economic Advisors.

To help meet demand for space, particularly during the fourth quarter when e-commerce inventories balloon to meet holiday demands, one industry supplier is thinking outside the warehouse box—literally.

In late 2018, Pennsylvania-based trailer leasing company Milestone Equipment Holdings introduced a line of mobile warehousing and storage products that are essentially mini-warehouses on wheels. Initially popular for storing merchandise imported from China ahead of trade tariffs that were scheduled to go into effect in early 2019, use has since expanded to include



temporary storage for e-commerce inventory, order fulfillment packing materials, and returned merchandise.

During the 2019 holiday rush, Milestone planned to provide 40% of its 59,000 dock-height trailers on wheels as mobile storage units for filling orders and processing returns.

"During the holidays,

not only are inventory volumes up, so are other operating resources such as packing materials," says Sarah Johnson, executive vice president of mobile warehousing and storage for Milestone. "Any additional space that can securely store products creates more flexibility and room in the warehouse."

On the flip side, post-holiday returns after the seasonal order-filling rush require reverse logistics storage space. The space needed to process returns can be 20% more than what's required for the original orders, CBRE estimates. With returns accounting for as much as 25 to 35% of e-commerce orders, that need for space doesn't disappear after orders are shipped.

"We worked closely with our customers to develop a product offering that delivers substantial cost savings and flexibility relative to traditional warehousing," says Don Clayton, Milestone CEO.

Equipment is getting smaller as well, because of low-level unit picking and other needs. Safety-focused proximity sensors on equipment and people are also more prevalent.

"The most common approach is to put a proximity monitor on a piece of equipment plus sensors on badges and vests that pedestrians wear," Wells says.

CALLING FOR BACKUP

Forklift and other equipment batteries are getting smaller and more powerful, which reduces the amount of storage needed for backup power. A reduced battery storage footprint also contributes to trends in warehouse size and configuration. "We see a push for higher ceiling heights and support column spacing that's in line with automatic guided vehicles," says Tray Anderson, logistics and industrial service lead, Americas, for commercial real estate services firm Cushman & Wakefield in Chicago. Wider column spacing—50 feet by 50 feet for example—allows more space configuration and layout flexibility.

The trend toward smaller warehouses in more locations is a key indicator of how companies have changed the way they approach e-fulfillment in recent years. "Before e-commerce, warehouses employed a hub-and-spoke system, with a large facility distributing a significant volume of products to brick-and-mortar



UNEX designed its SpeedCell suspended storage system to maximize inventory picking space in smaller warehouses.



"Chuck," an automated guided vehicle from 6 River Systems, navigates warehouse floors alongside staff to boost picking efficiencies.



E-commerce fulfillment centers often feature lower-level picking and more conveyor belts than traditional warehouses.

retail stores," notes Joseph McKeska, senior managing director at A&G Real Estate Partners, Chicago. "Today, it's more of a spider web. Large warehouses still supply stores, but there are also smaller fulfillment centers plus some distribution from stores."

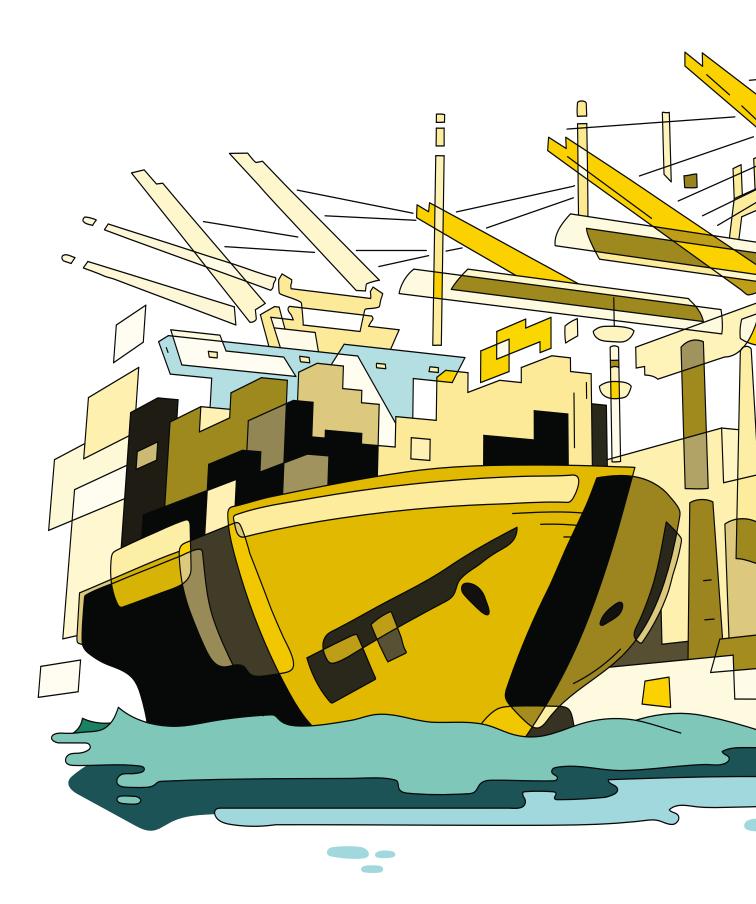
Ongoing warehouse innovations will continue to help weave and strengthen that e-commerce fulfillment web.

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SMALL PORTS BIG BENEFITS

SMALLER, LESSER-KNOWN PORTS OFTEN DELIVER SUBSTANTIAL BENEFITS TO SHIPPERS, LETTING THEM BYPASS CONGESTION WHILE LEVERAGING ADVANCED TECHNOLOGY.

HERE ARE SEVEN REASONS TO CONSIDER THESE LESS-TRAFFICKED CARGO DESTINATIONS.

BY SANDRA BECKWITH

sk a shipping professional to name alternative, lesser-known ports, and they might mention Savannah, Houston, or Philadelphia.

But ask them about Chester, Gulfport, or Tampa, and their response might be, "Hmmm..."

North America's smaller ports might not be top of mind with shippers, but they do quite well, thank you very much.

"Look at the Great Lakes ports," says Walter Kemmsies, chief strategist at Chicago-based real estate and investment management services firm JLL. "They handle some agricultural exports, but they also bring in a lot of steel."

These less-talked-about ports usually serve their region's industries. In the Great Lakes area, ports typically import goods for nearby industrial manufacturing while in Florida, imports to smaller ports often support the state's tourism industry.

And while the less-trafficked ports offer advantages the larger ports can't, they also have some disadvantages, such as the size of the vessels they can handle. These aren't destinations for the new 20,000 TEU ships—they're better suited to handle feeder vessels.

In the end, shippers often base port decisions on a macro view. "Where is the product being shipped from and where is the end of the supply chain? That dictates what shippers will do," says Steve Pastor, vice president of global supply chain and ports/rail logistics for commercial real estate services firm NAI James E. Hanson in New Jersey.

Still, shippers that overlook smaller ports thinking that they extend delivery time or aren't cost effective might be surprised to learn that these ports can save time, lower costs, and provide superior customer service. Like other smaller ports, the Port of Oshawa, Ontario, Canada, is flexible and innovative when helping shippers and carriers find solutions.



Here are seven advantages of using ports that are off the beaten water path:

SMALLER PORTS ARE LESS CONGESTED THAN LARGER COASTAL PORTS.

Less congestion applies not only to berths, but to rail and truck access as well. "When a container comes into a large East Coast port, for example, it might sit in the container yard for two to three days, then go to a railyard and sit again," says William Friedman, president and CEO, Port of Cleveland. "But our port is fluid and cargo moves quickly."

2 Smaller ports are cost effective.

Marine transportation is less expensive than intermodal, so the longer the freight stays on water, the more cost effective it will be. A Port of Cleveland analysis of the cost of shipping from Europe to Cleveland shows that keeping freight bound for Ohio and beyond on the water via the St. Lawrence Seaway is less expensive than a combination of marine and intermodal transportation from the coast (*see sidebar*).

<mark>3</mark> Smaller Ports Can Contribute to Shipper and Carrier Sustainability Goals.

Transporting freight by water is an environmentally friendly alternative to intermodal transport. "It's not only more cost effective to keep cargo on the water longer, it also reduces greenhouse gas emissions and congestion on highways," says Ian Hamilton, president and CEO of Canada's Hamilton-Oshawa Port Authority.

4 SMALLER PORTS CAN MOVE FREIGHT THROUGH CUSTOMS MORE QUICKLY.

The customs process in smaller ports often moves more smoothly because fewer people are involved.

"By using a smaller port, it's easier for me as a customs broker to make sure I'm talking to the correct person," says Gretchen Blough, LCB customs brokerage manager at third-party logistics provider Logistics Plus Customs Broker continued on page 196









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CONTAINING CARGO IN CLEVELAND

While the Port of Cleveland is primarily a bulk and project cargo port, in 2014 it floated into the container cargo business when it launched the Cleveland-Europe Express with vessel partner the Spliethoff Group of the Netherlands.

he Cleveland-Europe Express is the only direct, scheduled vessel service that moves containerized and non-containerized cargo between the Great Lakes and Europe. Through the Port of Antwerp, the freight has connections to Russia, Finland, Spain, the United Kingdom, and the Baltic states. During the three winter months in which the St. Lawrence Seaway is closed, vessels are re-routed to East Coast ports.

Express cargo coming from Northern Europe tends to be for the industrial market—machine parts and tools plus chemicals. "Manufacturers in Ohio may have a plant in Germany, Northern France, or in the U.K.," explains William Friedman, president and CEO, Port of Cleveland.

After almost six years, Port of Cleveland is seeing "a modest increase" in containerized freight. "We're handling around 5,000 TEUs annually, which isn't bad," says Friedman. "We've studied the market extensively and know that if we could capture the segment that's available to us, that could be 75,000 or 100,000 TEUs down the road."

CONTROLLING COSTS

What's Port of Cleveland's strategy for expanding its share of containerized cargo? "We've done an analysis that shows that carriers can get to and from origin and destination door-to-door for less money," he says. The key, he points out, is door-to-door cost, not portto-port. While the cost per container for the ocean portion of the journey is more expensive because the vessels are smaller, moving down the St. Lawrence Seaway to Cleveland eliminates the more costly and less environmentally friendly intermodal leg inland from an East Coast port.

"It's intermodal that's expensive," Friedman notes.

Walter Kemmsies, chief strategist at real estate and investment management services firm JLL, likes Cleveland's thinking. "For a lot of cargo and trade routes, that's a logical argument," Kemmsies says.

The challenge, he adds, is that the St. Lawrence Seaway closes during the winter because of ice. "With global warming, it might be open longer," he adds.

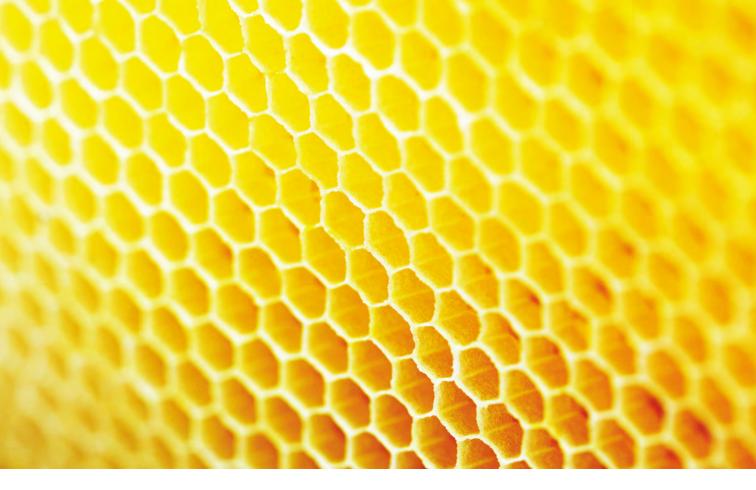
Friedman believes that shifting some infrastructure spending to the Seaway could help reduce the winter weather issue. Citing the \$1.7 billion spent to raise the Bayonne Bridge's roadway for the world's largest container ships, he notes, "For a tiny fraction of that amount, we could make improvements on the Seaway to keep it open longer."

Friedman is optimistic that more shippers will see the value Cleveland offers despite current practices.

"What we're proposing to carriers is a disruptive business model, but the freight transportation industry is one that's waiting to be disrupted," he says.



The Port of Cleveland, a bulk and project cargo port, expanded into the container cargo business by partnering with vessel partner the Spliethoff Group to create the Cleveland-Europe Express. It's the only direct, scheduled vessel service moving containerized and non-containerized cargo between the Great Lakes and Europe.



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continued from page 192

WATERLESS PORTS

If there's no water, is there a port? Turns out there is. Several waterless, intermodal "inland ports" located far from oceans and seas help reduce over-the-road traffic by moving it to eco-friendly and cost-efficient rail.

Construction of the **Central New York** Inland Port in Syracuse began in fall 2019 with a summer 2020 targeted completion date. The New York State Department of Transportation has committed \$21 million to expand the existing CSX rail yard so that 30,000 containers per year can move into the region from ships at the Port of New York/New Jersey.

The **Midwest Inland Port**, a multimodal transportation hub midway between Chicago and St. Louis, offers users domestic and international flexibility by connecting the Midwest to the East, West, and Gulf Coasts. It gives shippers less-congested access to one of the country's heaviest trucking and railway traffic flows that includes four rail networks. The port's airport has a U.S. customs office, a fixedbased operator, and runways capable of handling large aircraft.

The **Logistics Park Kansas City**, southwest of the metropolitan area, is a distribution and warehouse development served by BNSF Railway. The park has more than 7 million square feet of new distribution facilities and capacity for 17 million square feet total. BNSF's only full-service logistics park in the country, the development offers domestic container and trailer intermodal service, international container intermodal service, and direct-rail/carload service.



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Solutions in Erie, Pennsylvania.

"Dealing with a larger port is like calling any big company—you get put in an option menu," Blough adds. "Smaller ports tend to answer the phone directly, which means problems are solved without delay and freight moves more quickly."

A less intense environment facilitates processes, too. "Because smaller ports are less congested, customs tends to release freight faster if you have exams or documentation reviews," adds Mollie Bailey, vice president, international, for Transplace, a transportation management services provider in Texas.

5 Smaller Ports Welcome Ships being crowded out of larger ports.

As ships steaming into larger ports increase in size, smaller ships get nudged aside. "Look at the major airports as an example," says Kemmsies. "Smaller airplanes will always fly into them, but fewer are doing so. They're going to smaller airports instead."

Lesser-known ports are also an alternative for ships re-routed because of extreme weather or labor strikes. While these ports can't handle the volume that moves through Long Beach, Norfolk, or Miami, they're an essential part of many supply chains.

"As the world continues to globalize, there will be demand for narrowly focused ports," says Kemmsies. "Just because it's not the Port of Los Angeles doesn't mean a smaller port doesn't serve an important purpose."

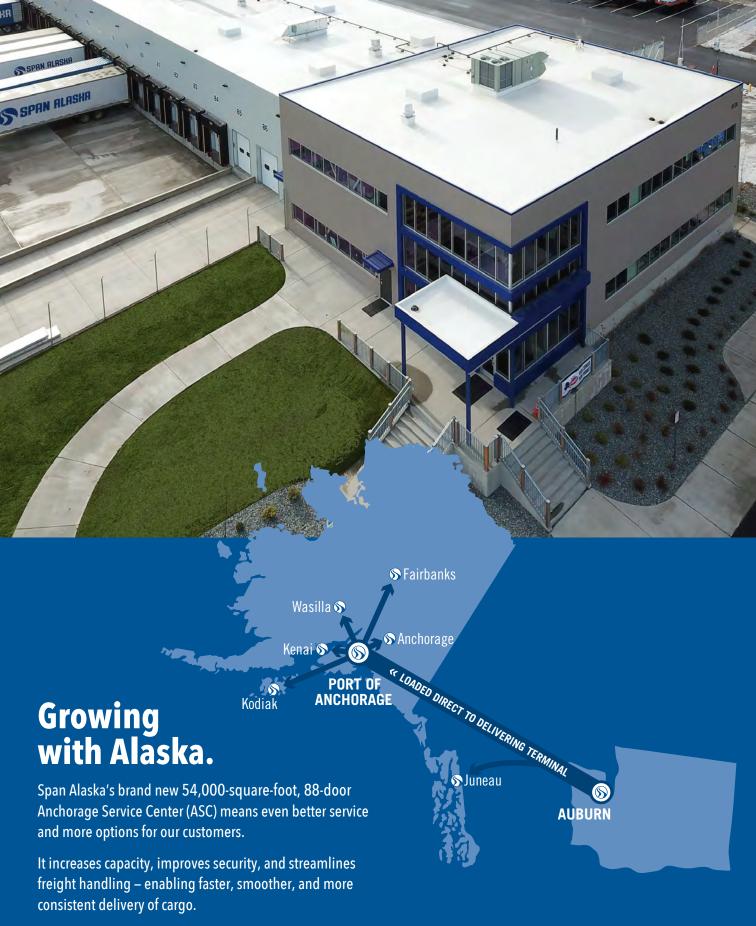
6 SMALLER PORTS OFFER PERSONALIZED CUSTOMER SERVICE.

"We can give more attention to each shipper and shipment and work closely with the terminal operator," says Friedman.

"Cleveland has a strong sense of customer service," Blough adds. "That's the kind of attention you want."

7 SMALLER PORTS CAN BE MORE FLEXIBLE.

Smaller ports tend to be more entrepreneurial when solving problems. "Generally, we'll be more flexible about trying to find solutions because we're smaller and more nimble," says Hamilton. "We're more innovative when finding ways to do things."



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CHARGING the ELECTRONICS SUPPLY CHAIN

Electronics suppliers, distributors, and retailers address high-voltage challenges—from shorter product life cycles to price erosion and unpredictable tariffs—with technology and changing business processes.

BY KAREN KROLL

Between 1997 and 2015, prices for both PCs and TVs plummeted by more than 90%, according to the Bureau of Labor Statistics. But even as prices dropped, these electronics packed in more features.

This shift poses multiple challenges for electronics suppliers, distributors, and retailers: lengthy, complex supply chains; rapid shifts in demand; and shorter product life cycles. Companies in the electronics industry also face uncertainty around tariffs and regulations, and are vulnerable to theft and counterfeiting.

The electronics supply chain "is a vastly complex, living organism," says John Mitchell, president and chief executive officer with IPC, an electronics standards organization.

Electronics companies, however, can address these challenges. They can use technology to gain supply chain visibility and assess their supplier and fulfillment network to



gain efficiencies. They can work with technical tools and partners that can help them comply with regulations and tariffs, and cut the risk of theft and counterfeiting.

MANAGING SHORTER **PRODUCT LIFE CYCLES**

Many electronic devices continue to shrink in size, even as they offer more power and capabilities. "Instead of 'jet engine' television sets, many now measure a fraction of an inch thick," says Walter Tobin, chief executive officer with the Electronics Representatives Association, a trade group.

The unrelenting pace of technology advances is a plus for consumers, but it also boosts expectations for everimproved devices, shortens product life cycles, complicates demand planning, and erodes prices. The moment many electronic products leave the factory, their prices fall at a rate of about 2% every two to four weeks they're in the market, says Harish Iyer, vice president, industry and solutions marketing for Kinaxis, a supply chain planning solutions provider.

A company that misses the roughly three- to six-month curve in the product life cycle during which it can make a profit may end up selling its goods at a discount. Suppliers of both components and finished goods face this risk.



Some electronics companies tap into technology providers such as Kinaxis, which offers a cloud-based supply chain planning solution, to help manage industry challenges.

To address the risk, electronics companies need to carefully manage their inventory. Tools such as dedicated inventory management solutions are generally more robust than spreadsheets and can, for instance, track product and transaction information in a central database from which all departments can draw. Some suppliers can provide sophisticated inventory management capabilities.

Some electronics retailers address the challenge of shorter product life cycles by using the devices as loss leaders. Because they may make little (if any) profit on the devices, electronics retailers instead promote ancillary products and service plans.

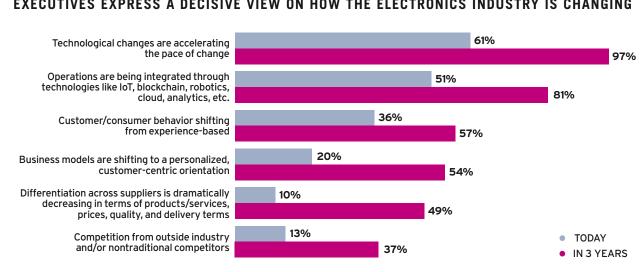
"They get customers in the store and

then sell the other things that go around the product," Tobin says.

A SHIFT TO PLATFORM

In addition to correctly anticipating "the right bundle of new features" to include in new products, electronics suppliers need to make sure the bundle they offer is the right platform for the content and services that will run from the devices, says Christopher Begue, director, electronics industry with IBM.

Here's why: Somewhat paradoxically, even as many electronic devices feature more capabilities, they've also become commoditized, with fewer consumers showing much brand loyalty. The risk is that the device becomes the "dumb display" in the middle between the



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consumer and the service provided, whether it's streaming music or building a grocery list, as noted in the 2018 IBM report, "Three Electronics Industry Strategies for the New Data Economy."

To counter this, electronics suppliers need to use technology not only to build smarter devices, but also to drive new customer experiences. Ultimately, many suppliers will need to transition away from hardware-only models.

Hardware is "the tip of the arrow" into multiple potential revenue streams, Begue says. Each interaction between consumers and a device can provide data and insight into their preferences, and that knowledge could lead to new revenue models. One example is Netflix's shift from providing disks containing movies to offering them streamed online.

NAVIGATING SUPPLY CHAIN COMPLEXITY

Along with the devices themselves, electronics supply chains have also grown in complexity, constraining visibility and heightening uncertainty. As the number of suppliers, distributors,

PLUGGING INTO SUPPLY CHAIN CHALLENGES

Demand and supply variability, coupled with re-ordering ease and lower lead times, are factors that influence the consumer demand trends that the U.S. electronics industry needs to respond to. SpendEdge's latest report lists the following electronics supply chain challenges:

1 COMPARATIVELY SHORT PRODUCT LIFE CYCLES. Short product life cycles expose the U.S. electronics industry to an atmosphere full of risk. Companies always have to carry extra inventory to meet customer demand due to the changes happening over the course

of the life cycle. This increases carrying costs and risks to the company's bottom line, if the product fails to perform in an expected way.

However, companies can create multiple supply chain policies that reflect life-cycle demand. These patterns allow companies to compare plans based on price curves and customer segments and find the best results.

2 GLOBALIZATION. In a global supply chain,

numerous stakeholders are involved in a product's journey from raw materials to finished goods, requiring companies to collect and organize various data sets.

Strong visibility across the supply chain then becomes a necessity for firms to ensure that you're not constantly reworking plans and dealing with communication problems.

Lack of visibility into the supply chain can cause companies to miss discrepancies, which results in unprecedented risks.

An end-to-end supply chain network is crucial for companies that can capture all master and transactional data with one system-including details from supply chain partners. This reduces the time it takes to analyze the current data and identify any supply chain issues.

3 MERGERS AND ACQUISITIONS.

Mergers and acquisitions are important for the expansion of companies in the U.S. electronics industry. The longer a company takes to integrate data from a newly acquired company, the slower it will see the payoff.

Companies require a variety of enterprise resource planning (ERP) systems that can work well together. The faster the company merges data, planning, and analytics, the sooner it can reap the benefits of investment.

The planning solution should be efficient enough to pull data and model the behavior of multiple ERP systems. Once the ERP pulls data into a standard format, companies can easily manipulate and analyze it to bring down their inventory and cost risks. fulfillment centers, and other organizations increases, supply chain data gaps and inaccuracies become more frequent and troublesome.

Spreadsheets, despite their ubiquity, provide "only so much intelligence and sophistication," Iyer says. Companies need other technical tools to provide the robust information required for today's supply chains.

For instance, some Internet of Things (IoT) applications can feed real-time transportation data to a supply chain planning system, allowing for rapid corrections while products are in transit.

Not surprisingly, more than 80% of electronics executives responding to the IBM survey indicate they expect their organizations will reinvent operations by 2022 with tools such as IoT, blockchain, and robotic process automation (*see chart, page 200*).

COMPLYING WITH TARIFFS

Most electronics organizations must navigate an increasingly uncertain tariff environment. While some organizations may try to find suppliers and fulfillment centers outside the specific countries on which tariffs are imposed, that's rarely a straightforward shift. Before they begin working with a supplier, many electronics companies must validate the quality and reliability of the supplier's operations and the products they're providing—a process that can take months.

Options exist, however. Some U.S. companies are opening fulfillment and distribution facilities in Mexico. As of late 2019, the country remained outside most trade disputes occurring between the United States and China.

Some organizations can take advantage of Foreign Trade Zones (FTZs) within the United States. For instance, the Arizona distribution center of Avnet, a technology solutions provider, is designated an FTZ, says David Paulson, global vice president, Avnet United and Velocity.

Among the benefits FTZs can offer: No duties are imposed on imported goods that are later re-exported, and



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FTZs eliminate duties on waste, scrap, and rejected or defective parts.

Transportation Insight (TI), a global logistics provider, worked with one supplier that was able to cut \$250,000 in monthly expenses by shipping into an FTZ, says Robyn Meyer, partner, enterprise logistics. To make this happen, TI worked with the supplier to complete the necessary paperwork and identify how to efficiently ship the product from China to the FTZ. TI also helped manage fulfillment and lastmile delivery.

Importers and their suppliers can also try to take advantage of De Minimis 321, which allows a shipper to import one shipment per day, per person, duty-free and with limited data elements as long as the value of the shipment is less than \$800. "It's a big opportunity that many shippers aren't taking advantage of," Meyer notes.

MANAGING REGULATIONS

Each year, about 50 million tons of electronic and electrical waste, or e-waste, is produced, reports the World Economic Forum (WEF). Of that, only about 20% is formally recycled.

Along with the danger e-waste poses to the environment, it represents a lost opportunity for electronics suppliers and fulfillment operations. The material value alone is worth \$62.5 billion, WEF estimates, noting that the volume of gold in one ton of mobile phones is more than 100 times the amount in one ton of gold ore.

On a positive note, more companies are expressing interest in the environmental impact of electronics that reach the end of their lives. "More and more requests for proposals and bids are requiring an R2 or e-Stewards certification," says Valerie Smith, business development and compliance manager with IMAAN International, which provides e-waste recycling and IT asset disposition solutions.

R2:2013, or the Responsible Recycling standard for Electronics Recyclers, requires, among other steps, that electronics recyclers take all practical



Electronic components distributor Avnet can track and match every product a customer purchases all the way back to the supplier, which helps fight counterfeiting.

action to direct tested equipment and components toward reuse and resale. The e-Stewards Standard for Responsible Recycling and Reuse of Electronic Equipment is consistent not only with international waste trade laws, but also with data privacy requirements for customers.

IMAAN is also considering reprocessing and donating working items to organizations that may have a use for them, such as libraries, homeless shelters, and other nonprofit organizations.

MINIMIZING COUNTERFEITING AND THEFT

How can retailers and distributors ensure the products they purchase from their suppliers are what they claim to be? To start, transparency is key. Avnet, for instance, can track and match every product a customer purchases all the way back to a supplier, Paulson says.

Blockchain can play a role by providing an immutable record of an object throughout its life cycle. No single party can change or append the data without the network's consensus.

In addition, retailers should work directly with manufacturers and their authorized distribution channel partners, says Don Elario, vice president of industry practices with the Electronic Components Industry Association, a group of electronic component manufacturers and their representatives and authorized distributors. These companies are much less likely to substitute counterfeit goods for the real thing.

The risk of theft for some electronic devices, such as phones and tablets, can be significant, given their high value and relatively small sizes. To address occurrences of theft during last-mile delivery, suppliers can map variations in the rates of theft between different regions, Meyer says. Using this data, they can identify where it might make sense to use alternative delivery and fulfillment options such as leaving items in a storage locker rather than consumers' front doors.

Flexibility and adaptability have become critical attributes for all players in the electronics supply chain. In addition, suppliers, fulfillment center operators, carriers, retailers, and others increasingly need to speak up. "We need policies to better compete," Mitchell says.

Electronics companies, both individually and through trade associations, need to connect with the regulators and legislators who develop policy. The industry is complex even to those immersed within it, Mitchell notes, let alone to those outside it.

"We need to speak up," he says, "and help policymakers understand."

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FROM TARIFFS AND TRADE WARS TO NEW TRADE AGREEMENTS AND UPDATED INCOTERMS, 2020 IS SHAPING UP TO BE AN INTERESTING YEAR FOR GLOBAL SHIPPERS.

2020 GLOBAL TRADE: IT'S A WHOLE NEW WORLD

MANAGING TRADE COMPLIANCE IN A VOLATILE ENVIRONMENT

Tariffs and socio-economic conditions create volatility for businesses involved in global commerce. These issues can disrupt business cycles and create financial risk.

Businesses operating globally are subject to specific regulatory policies enforced in every country involved in the end-to-end supply chain. Naturally, the potential for fines and penalties requires extensive research and close governance of ongoing trade compliance programs to remain abreast of each sovereign nation's trade regulations and agreements.

The compliance target is ever moving. To mitigate the risk of noncompliance, companies must scrutinize every detail of their trade process to identify gaps that increase exposure to financial risk.

International shippers can't afford to gamble on compliance, as penalties are costly. U.S. Customs and Border Protection (CBP) scrutinizes imports using the Harmonized Tariff Schedule (HTS) to classify raw material or finished goods based on material makeup, product name, and/or intended use.

This close examination creates added risk and exposure for importers and exporters in an era of uncertainty for trade agreements and emerging security threats.

THE IMPACT OF NONCOMPLIANCE

During the past two years, trade tensions have been disruptive to U.S. businesses impacted by product- and origin-specific tariffs. Added layers of administrative enforcement create additional risk.

Free-trade agreements negotiated with various countries provide U.S. businesses the ability to easily sell products to those countries with lower import duties, reducing barriers to U.S. exports.

The United States–Mexico– Canada Agreement (USMCA) recently replaced the North American Free Trade Agreement (NAFTA). The USMCA includes new policies on cars, labor, environmental standards, intellectual property, and some digital trade. It also gives U.S. manufacturers more protection.

Meanwhile, the United States just entered a "phase one" deal with China, agreeing to "halve 15% duties on \$120 billion of imports and delay others in return for Chinese promises to make structural reforms and purchase an additional \$200 billion in American goods and services over the next two years," reports the *American Journal of Transportation*. Phase two will likely take place after the presidential election.

The passage of the Trade Facilitation and Trade Enforcement Act (TFTEA) necessitates awareness of evolving terms in trade agreements. The measure gives CBP a mandate to increase trade enforcement by focusing on trademark violations, anti-dumping, countervailing duty, social compliance, and established general trade compliance practices.

The e-commerce-driven explosion of small-package shipments across the U.S. border compels CBP to address new security threats emerging in this channel and ensure all revenue due to the U.S. government is collected.

COMPLIANCE IS A JOURNEY, NOT A STATIC PROGRAM THAT SITS ON A SHELF.

As a result, CBP investigators are questioning HTS numbers, particularly for targeted items and imported products that reflect an HTS classification change possibly spurred by the assessment of a higher or recently adjusted duty.

BEST PRACTICES

Compliance is a journey, not a static program that sits on a shelf. It has to be an ongoing process of assessment and evaluation. As a matter of best practice, corporate executives need to focus their attention on the three top issues of trade compliance.

1. Know the regulations and tariffs that CBP enforces on goods imported into the United States and how to stay aligned with ever-changing HTS



requirements. This involves using an import management process that is designed and constantly maintained as a matter of corporate control.

2. Have a plan if your organization loses the benefits free-trade agreements offer. Executives need contingency strategies to overcome the loss or change to agreements like USMCA or adjustment to parameters for participants in the Generalized System of Preferences, which grants duty-free treatment of goods of designated beneficiary countries.

3. Take on the mindset of proactive compliance, including record keeping, supervision and control, and classification processes. Informed compliance is more than a best practice. It is the law. For decentralized

organizations, compliance is difficult to manage without documented processes and ongoing training.

Many importers and exporters recognize that it is a best practice to seek independent evaluation of their compliance platform. Independent Verification and Validation (IV&V) requires a knowledgeable partner that helps identify high-risk areas, uncovering gaps and inconsistencies that could lead to fines or other punitive damages. Your IV&V partners must also introduce a compliance platform plan to close the gaps.

– By Rick Brumett Vice President, Client Solutions, Transportation Insight

THE USMCA: FINALLY RATIFIED! WHAT TO EXPECT

Before the United States-Mexico-Canada Agreement (USMCA) was ratified on Dec. 19, 2019, the U.S. International Trade Commission had submitted an economic analysis of President Trump's signature trade agreement meant to replace NAFTA.

The analysis report was carried out by the independent and bipartisan International Trade Centre (ITC), which assessed the USMCA's impact on the U.S. economy as a whole as well as on individual sectors of the economy. That assessment included the deal's predicted impact on gross domestic production, imports, exports, employment, production, and more.

What were the report's bigpicture conclusions? Positive.

The USMCA will be slightly positive overall for the U.S. economy and employment, the report noted. The ITC's model estimates that the USMCA will raise U.S. real GDP by \$68.2 billion and create 176,000 U.S. jobs.

While significant in absolute terms, this is only a 0.35% and 0.12% increase, respectively, compared to the status quo. Trade overall with Canada and Mexico would increase by more though, with exports projected to grow by 5.9% and 6%, respectively, and imports by 4.8% and 3.8%, respectively.

Most of the growth resulting from improvements, however, will not be caused by a reduction of tariffs, since most tariffs are already zero under NAFTA. The U.S. economy will mostly reap the benefits of provisions on digital trade and changes to the rules of origin for auto.

Since NAFTA was created at the dawn of the internet, it does not contain provisions designed to tackle the digital world we

INCOTERMS UPDATE GUIDES GLOBAL TRADE

A consistent set of business terms helps international trade flow smoothly. The Incoterms, published by the International Chamber of Commerce (ICC), is a set of 11 conditions that importers and exporters use voluntarily to manage responsibility for shipments.

In January 2020, the ICC released the 2020 Incoterms, the first update since the 2010 set. The 2020 terms don't contain significant changes. In fact, companies can continue to use the 2010 terms if all parties agree, or the parties can opt to spell out terms in the sales contract and not refer to Incoterms at all. Still, the terms are a convenient way to ensure all parties in the transaction understand their responsibilities.

The Incoterms spell out the responsibility only for the movement of goods, not their title or ownership. "Incoterms describe when the responsibility for risk and cost moves from the seller to the buyer, that's all," says Tom Cook, an international business consultant. – *Gary Wollenhaupt*

COMING TO TERMS WITH INCOTERMS

The Incoterms represent a spectrum of responsibility and costs. On one end, Ex Works means the seller is responsible only for packaging. The buyer bears other expenses loading, delivery to the port, export duties and taxes, security clearances, terminal charges, import duties and taxes, and delivery charges.

At the other end of the spectrum, Delivered Duty Paid means the seller is responsible for all costs.

One noticeable change for 2020 is the renaming of Delivered at Terminal (DAT) to Delivered at Place Unloaded (DPU). This change reflects the fact that the buyer or seller may want to have goods delivered someplace other than a terminal.

DPU is often utilized for consolidated containers used by multiple consignees. It's the only term in which the seller is responsible for unloading the cargo.

The Free Carrier (FCA) term was updated to allow parties in the contract to agree the buyer could issue a bill of lading with an on-board notation to the seller.

The change overcomes the problem when the seller has to load the cargo on a transport hired by the buyer that's not the final international carrier. If the transaction uses a letter of credit as the payment method, the bank will often require the seller to present a bill of lading with the on-board notation. However, international carriers would not display the notation on a bill of lading because they didn't receive the goods directly.

Now, the forwarder or transportation company can issue a bill of lading or carrier receipt that helps in getting paid under letters of credit.

The Cost Insurance & Freight and Carriage Insurance Paid To (CIP) terms are the only ones that require sellers to provide insurance. Now, under the CIP term, the seller has to provide a marine insurance policy of at least 110% of the cargo's value as part of their transaction responsibilities.

Appointing a point person to manage the process for the company is a recommended best practice.

2020 INCOTERMS

EXW Ex Works FCA Free Carrier

FAS Free Alongside Ship*

FOB Free On Board*

CFR Cost & Freight*

CIF Cost Insurance & Freight*

CPT Carriage Paid To

CIP Carriage Insurance Paid To

DAP Delivered at Place

DPU Delivered at Place Unloaded

DDP Delivered Duty Paid

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now live in. The USMCA would establish and clarify rules on digital trade, removing the current uncertainty on the issue and ensuring that data flows openly among the three nations.

The new provisions on the auto rules of origin would also increase U.S. production of auto parts and the number of people in the United States employed in this sector.

Which USMCA rules are projected to have a relatively large economic impact?

The report highlighted the significant impact digital and automotive trade rules will have on the economy.

Digital trade and e-commerce.

The USMCA would be the first U.S. free-trade agreement that includes a chapter specifically on digital trade. Digital trade provisions would affect not only traditional digital companies but also benefit firms across sectors including manufacturing and agriculture.

The report also highlighted international data transfer provisions that reduce policy uncertainty as the most important components of the digital trade chapter. The USMCA includes provisions that would both prohibit "discriminatory treatment of cross-border data transfers" and forced data localization.

In all three member countries, the transport industry, the financial services sector, and the construction industry would experience the greatest reductions in trade costs stemming from the cross-border data transfer provisions in the USMCA, the report noted.

The biggest winner of the new data transfer provisions would be the Canadian banking sector, which would benefit from a cost reduction of 4.5%.

Meanwhile, the cost reduction effect would be smallest in the agriculture sector at 0.56% across all three economies. Interestingly, the report acknowledged that cost reduction estimates across the

UNCERTAINTY IS THE WORD FOR 2020

CURRENT GLOBAL TRADE POLICIES CREATE A LEVEL OF UNCERTAINTY THAT MAKES IT DIFFICULT FOR IMPORTERS TO PROJECT COSTS AND VOLUMES.

"The ongoing tariff situation and trade uncertainty are concerns, despite having the U.S.-China phase one deal in place," says Jonathan Gold, vice president of supply chain for the National Retail Federation. "The trade deal is a small step forward, but we still have tariffs on \$370 billion worth of trade with China, which can change any time the United States decides China isn't living up to its commitment under the agreement."

Also on the global trade radar is the European Union (EU). Certain products, food, and beverages from the EU could be slapped with a 100% tariff as the United States fights against Airbus subsidies that represent an unfair marketplace advantage over Boeing. There's also talk of a 25% duty on autos imported from the EU.

"It's difficult to shift sourcing strategies around the EU," Gold says. "You can't get French wine or Italian olive oil from anywhere else."

Brexit also looms as an unknown. The United States and the United Kingdom will have to negotiate new trade deals as the country leaves the EU.

Over on the trans-Pacific, ocean rates have climbed as trade surged during the past several years, but tariffs are changing that situation. For example, the International Housewares Shippers Association is negotiating ocean carrier rates for 2020 with 10 carriers. In 2019, the contracts were focused on making sure shippers would get their loads on vessels. This year, rates are expected to be flat or possibly decrease due to lower volumes on the contract year that runs May 1 through April 30.

"We want to make sure we're committing enough volume so that if space does get tight, carriers will continue to load cargo," says Jeff Bergmann, executive director, International Housewares Shippers Association. "If they don't, you have to go to the spot market where rates are high."

Lower volumes moving through West Coast ports could be a blessing in disguise, allowing terminals and port truckers to address issues that cause congestion and slowdowns.

Domestic carrier rates may be soft as well, with spot rates at or below contract rates. "This is a great opportunity for the ports to work through congestion and efficiency issues," Gold says. "Turn times at some terminals are longer than they need to be."

Also, the impact of the International Marine Organization's 2020 low-sulfur fuel requirements for ocean vessels could impact rates and sailing availability in the coming months as the carrier community adapts to the new regulations. – *Gary Wollenhaupt*





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board would likely be lower if they took into account measures on data localization and data transfer already committed to by Canada and Mexico under the Comprehensive and Progressive Agreement for Trans-Pacific Partnership.

In addition to provisions ensuring the free flow of data, U.S. firms in the business-toconsumer (B2C) e-commerce sector, such as Amazon and eBay, would also benefit from higher de minimis thresholds (DMT) in Canada and Mexico. Canada would increase its DMT for customs to C\$150, up from C\$20, while Mexico agreed to increase customs DMT from \$117, up from \$50.

Shipments whose value falls below the DMT are exempt from customs duties and taxes, and undergo faster clearance and customs checkpoint processing. Thus, higher DMT thresholds would lower costs and expedite delivery processes for U.S. firms shipping to Canada and Mexico. The ITC report estimates that U.S. e-commerce exports to Canada and Mexico would increase by \$332 million and \$91 million respectively.

Gains from higher DMT on customs duties would be partially offset by relatively low DMT for taxes–U.S. shipments to Mexico and Canada would still be subject to taxes if they pass a threshold of \$50 or C\$40, respectively.

-By William Alan Reinsch Senior Advisor and Scholl Chair in International Business

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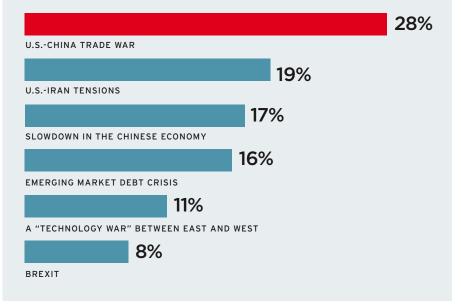
LOGISTICS EXECS WORRIED DESPITE U.S.-CHINA TRADE DEAL

Even after a signed trade deal that de-escalates months of back-and-forth trade retaliation between the United States and China, logistics executives say that a U.S.-China trade war is the top threat to global growth.

Agility and Transport Intelligence recently surveyed logistics professionals on the global economy and the leading threats to growth in 2020. Twenty-eight percent of respondents see a U.S.-China trade war as the biggest threat to global growth in 2020. U.S.-Iranian tensions were next, followed by a slowdown in the Chinese economy.

Three of the leading threats involve China, which highlights its growing importance to the global economy and its ability to affect the fortunes of other countries.

WHAT IS THE BIGGEST THREAT TO GLOBAL ECONOMIC GROWTH IN 2020?



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West Coast products are

extracted from containers

and shipped directly



Supply

Applying Lean Thinking to PROCUREMENT

How to slate demand and supply initiatives and techniques into your procurement strategies.

BY PAUL MYERSON

Designing and implementing a Lean procurement process can significantly change the way a company does business.

aving a standardized process to source materials or parts and using just-in-time (JIT) inventory policies can help with the balance sheet to minimize variability in the entire supply chain.

Selecting and assessing suppliers the same way has the same reliable purchasing structure and can be more easily integrated into flexible production processes, giving companies a competitive advantage.

ORGANIZATIONS CAN USE A VARIETY OF LEAN TOOLS TO IDENTIFY AND REDUCE OR ELIMINATE WASTE, SUCH AS:

• Value stream mapping (VSM) diagrams the flow of materials and information from customer to supplier through your organization, separating value-added and nonvalue-added activities. A VSM of internal procurement and purchasing processes can create a future state that is both streamlined and improved.

• Quality at the source, based on the concept of performing quality checks at every stage of a process, allows early supplier integration and problem-solving competence by expanding the viewpoint to the total cost of quality.

• One-piece flow, or batch size reduction, can be created by establishing local suppliers to assist with flexible manufacturing and supply chain strategies for shorter inbound transportation distances and consistent deliveries to help smooth demand fluctuations.



Why You Need a Lean and Agile Management Process

Companies expect their procurement and purchasing organizations to provide materials and assemblies on time, and to meet their demands. By applying Lean principles to procurement and purchasing processes, businesses experience multiple benefits throughout the supply chain.

For example, one consulting firm found the following results after applying Lean principles to various clients' procurement processes:

Lead time: Implementing inventory reporting and accuracy standards allowed for faster decision-making and ordering, thereby reducing lead time for non-standard items by four hours (50%).

Optimizing an insurance company's claims process decreased average throughput time from nine business days to less than four business days (56%).

Quality: Optimizing and standardizing a business-to-business data exchange process decreased supplier-caused defects by 98% during the entire process.

Lean materials requirements planning (MRP) solutions minimized inventory reconciliation to an annual activity, increasing inventory data quality.

Optimizing an insurance claims process decreased errors by 98% over the entire process.

Costs: Inventory accuracy improvements from a Lean MRP solution reduced inventory by €2.5 million (www.fourprinciples.ae, 2016).



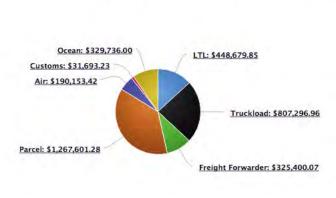
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Lean Procurement is Demand Driven

Traditional manufacturing and distribution was forecast-based and sales driven, with product "pushed" through the supply chain to the market.

This can cause an unstable supply chain due to what is known as the bullwhip effect (*see chart below*), where demand variability increases as one moves up the supply chain away from the retail customer, and small changes in consumer demand can result in large variations in orders placed upstream.

Eventually, the network can face very large swings, as each organization in the supply chain seeks to solve the problem from its own perspective, leaving inventory shortages or excesses, and often resulting in increased cost and poorer service.

A demand-driven supply chain, on the other hand, is:

Driven by customer demand where products are "pulled" to market by

customers: The companies in a supply chain work more closely together to sense and shape market demand by sharing information and collaborating with each other. By doing so, they achieve greater and more timely visibility into demand. Flexible and responsive: Companies minimize the effect of long material lead times by adopting postponement strategies.

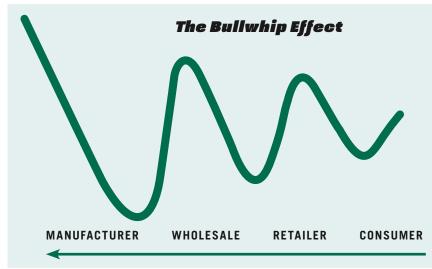
Efficient, with waste minimized in the procurement cycle: Without

Lean procurement, buyers spend much of their time on non strategic processes such as tracking down order statuses, entering purchase orders, and maintaining individual spreadsheets for analysis. As a result, they often miss opportunities for mutually beneficial supplier negotiations and process efficiencies.

To reach the goal of a Lean, demanddriven supply chain, one can focus on these characteristics and try to come up with improvements, from either the demand side or the supply side.

• On the demand side, companies try to get a better sense of actual market demand and, in some cases, can attempt to shape it through tools such as promotions, discounts, and everyday low pricing.

• On the supply side, companies try to become more flexible and agile to be able to use more of the actual demand, thus becoming less reliant on forecasts.



LEAN AND TECHNOLOGY OPPORTUNITY

While cost reduction and efficiency is always an area of focus for procurement, technology can help enable a Lean procurement strategy to reap the full reward.

A growing number of companies are adopting innovative procurement technologies to increase efficiency in these uncertain times, according to a 2016 Deloitte Global CPO Survey.

Most procurement executives said they were investing heavily in innovative technology solutions:

• **70%** were investing in selfservice portals

• **45%** were investing in cloud based computing

• **42%** were investing in mobile technologies

• **16%** were investing in social media technology

Spend analysis is the largest focus for technology investments (38% of executives responding to the survey said this area is most likely to receive investment), followed by contract management (37%), e-sourcing tools (30%), supplier relationship management technology (29%), and requisition-to-pay solutions (24%).

However, the majority of procurement organizations do not have a clear digital strategy in place — 60% of procurement executives stated that they hadn't yet formulated such a strategy.

Surprisingly, while involvement in risk management and mitigation is a growing area of focus for procurement executives, only 25% are involved in it now.

This lack of focus in a digital strategy and a low level of risk management and mitigation involvement can result in significant disadvantages to an organization in today's volatile global supply chain (McAvoy, 2016).

Ultimately, Lean tools such as VSM, SS-workplace organization, visual workplace, Kaizen, standard work, and technology are a means to an end. The focus should be on strategy, leadership, culture, and people first, before implementing the appropriate tools and technology.



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Lean Procurement Strategy



Strategic sourcing, as opposed to Lean procurement/sourcing, is a term that has been around since the 1990s. It is a systematic, data-driven approach to enhance a supply base and improve the overall value proposition. It focuses on analyzing spend, inventory data, holding costs, and personnel expenses to find opportunities for savings, and considers geopolitical and financial risks for suppliers based on product or service type.

In many cases, this is followed by supplier rationalization to obtain volume discounts and improve product and service delivery.

Strategic sourcing and Lean procurement philosophy don't necessarily conflict. In fact, a Lean procurement strategy requires a longterm commitment to combining elements of strategic sourcing with Lean principles.

Strategic sourcing is more of an initial step to identify long-term supply partners and coordinate purchasing efforts with operations and manufacturing. In a global supply market, conditions change, and companies need to regularly go to market to identify, qualify, benchmark, and select global suppliers with the greatest capability and competitiveness.

What might a Lean procurement

Excerpted with permission from Lean Demand-Driven Procurement, How to Apply Lean Thinking in Your Supply Management Processes by Paul Myerson.



strategy look like? At the very least, it should focus on the following objectives:

Collaboration with key functional

areas: Lean sourcing involves creating a strategy for future success through internal collaboration (for example, purchasing and operations working more closely together). This is accomplished by streamlining procurement operations and purchasing while at the same time improving financial performance.

Identify and implement sourcing

savings: Use Lean Kaizen strategies to reduce costs in areas such as logistics management through shipment consolidation, improved inventory planning and management, and cost analysis. Lean sourcing relies on effective, sustainable cost reductions that don't reduce quality or reliability, while balancing sourcing and operations requirements.

Improve quality and reduce waste: Lean sourcing relies heavily on reducing waste in all forms, including time, efforts, and capital. These issues can be addressed by compliance and process improvements and standardization.

Achieve ongoing additional cost reduction and process improvement opportunities through collaboration with

supply partners: Lean sourcing involves collaborating with suppliers to develop better contract terms, optimize transport costs, and build a stronger and more effective supply network, minimizing the chance for disruptions.

ABOUT THE AUTHOR

A regular contributor to *Inbound Logistics*, Paul Myerson has been a successful change catalyst for a variety of clients and organizations of all sizes. He has more than 30 years of experience in supply chain strategies, systems, and operations that have resulted in bottom-line improvements for companies including General Electric, Unilever, and Church and Dwight (Arm & Hammer).

Lean procurement organizations need to understand and select suppliers based on factors that influence total enterprise cost, both tangible and intangible. Elements of total enterprise cost include:

- Sourcing supply cost, quality, service, and risk factors
- Tariffs, trade, and duties
- Logistics cost, quality, service, and risk factors

Organizations that have gone down the Lean procurement path have learned to combine aspects of Lean and strategic sourcing. Lean factors to consider include:

- Supplier integration and demand management
- Reduced product complexity
- Synchronized processes
- Part standardization/SKU rationalization
- Reduced inventory
- "Pull" most products
- Joint product design
- Collaborative cost takeout

Strategic sourcing factors include :

- Company-wide approach
- Proactively managing supply risk
- Total cost of ownership/request for quotes
- Global reach

Lean procurement provides opportunities for process improvements and savings. It can improve contract compliance and develop better, sustained partnerships with suppliers and other business partners.





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WHAT IF GENERAL GEORGE PATTON WAS WALMART'S CEO?

GENERAL PATTON WOULD SURVEY THE E-COMMERCE BATTLEFIELD WHERE WALMART COMPETES AND CONDUCT A THREAT ASSESSMENT OF EVERY MAJOR COMPETITOR, ESPECIALLY AMAZON.

BY BRITTAIN LADD

etail and warfare are very similar, especially as they relate to the need for thinking strategically and making bold moves.

Few individuals in the history of warfare were more strategic or bold than General George S. Patton. How good was Patton at commanding troops and coming up with strategies to defeat the enemy? Historians and military researchers have said that if senior civilian and military leaders embraced Patton's ideas for how to fight the war in Europe, World War

II could have ended two years earlier than it did.

"Patton had his critics, but he was highly respected for his ability to design and carry out strategies that were unorthodox, bold, and highly successful," Patton researcher and business advisor Lisa Goodale told *The Observer*. "Is it possible that Patton could step into the role of CEO at a company like Walmart and succeed? Yes, no question.

"I also support the argument that Patton wouldn't hesitate to end the focus on strategies he viewed as being wrong and ineffective," she added. "Patton looked for weaknesses and inefficiency in the armies he commanded and the enemies he fought, and that ability could easily be applied to leading a corporation. Patton exploited weakness and eliminated inefficiencies better than any general in history."

Walmart is attempting to think big and be strategic. CEO Doug McMillon has approved several acquisitions and initiatives that are arguably strategic to the company. Unlike Amazon, however, Walmart failed to recognize the value of e-commerce during its early days and over the years has severely underfunded their e-commerce logistics network.

To catch up, Walmart has placed some big bets on e-commerce. But these bets aren't paying off as well as they should. In addition, many analysts question if Walmart's e-commerce strategy is effective.

On August 8, 2016, Walmart announced that they were acquiring Jet.com, an e-commerce company co-founded by Marc Lore, for \$3.3 billion in cash. They acquired Jet.com to gain access to technology and a team of individuals who were willing to make bold moves using e-commerce, compared to many Walmart executives who failed to see e-commerce's value to a retailer with 11,766 stores operating worldwide.

Any talk of Walmart running Jet.com as a separate company, however, is lunacy; Walmart will absorb Jet.com into its own platform and kill the brand at some point.

I don't dispute the need for Walmart to invest in the future or in digital. In addition, Walmart has been generating impressive results—achieving growth and boosting operating income. Walmart's online sales continue to grow in excess of 30% quarterly.

But a recent report proclaiming that Walmart's e-commerce division projected losses of more than \$1 billion on \$21-\$22 billion of revenue in 2019 generated a tremendous amount

WHAT STRATEGY WOULD PATTON IMPLEMENT TO FIGHT AMAZON?

One technique I use in my consulting practice is to place CEOs from different industries at another company. For example, how would Apple CEO Tim Cook run Walmart?

I also place historical figures in a CEO chair for the first time. It's interesting to imagine if General George Patton was the CEO of Walmart. What would Patton see? What strategy would he implement against Amazon?

I am convinced that the first thing Patton would do is survey the battlefield (industry) in which Walmart competes and conduct a threat assessment of every major competitor, especially Amazon. Patton would identify the strengths and weaknesses of each competitor. A truism in war is that you never engage an enemy where they are strongest.

As president and CEO of Walmart eCommerce U.S., Marc Lore's strategy, approved by Walmart Inc. CEO Doug Maximize every opportunity to leverage stores to drive value to customers. Focus like a laser on improving the grocery business, a key competitive advantage for Walmart. (If Walmart loses the grocery war to Amazon, they will fail as a company. Guaranteed.)

I remain incredulous that Walmart isn't doing more with their grocery business or increasing their focus on the food experience inside their stores with cafes and restaurants.

I'm also amazed that Walmart hasn't invested in or acquired DynoSafe or eDOR, or introduced the use of products from PackIt to offer customers a much improved online grocery delivery experience.

Patton passionately believed in the importance of collaborating with other branches of the armed



of discussion on Wall Street and in the media.

Losses are to be expected as e-commerce is notoriously unprofitable. Amazon was not an overnight e-commerce success; it took nearly 16 years to start generating profits from their e-commerce operations.

I am not arguing that Walmart should ignore e-commerce. Walmart can't focus only on their stores and must invest in e-commerce and digital to provide customers with the options they desire.

What choice does the retailer have? It is clear that Walmart doesn't have 16 years to get its e-commerce house in order. McMillon, can only be described as an attempt to take on Amazon where they are strongest: e-commerce.

The following quote by Patton rings true: "If everyone is thinking alike, then somebody isn't thinking." Patton would call an immediate halt to the e-commerce strategy and state that Walmart needs to have a digital strategy.

But Patton would never support a strategy whereby Walmart fights a competitor that has the biggest advantage. He would assuredly divest Bonobos, Moosejaw, and ModCloth and reduce Walmart's e-commerce budget.

In addition, Patton would redeploy resources and capital to do the following:

forces. He would be the first to push for Walmart to find strategic partnerships.

For example, Home Depot is investing \$1.2 billion to build and open 170 new distribution facilities across the United States, allowing 90% of the population to have same- or next-day delivery. Patton would argue that Walmart/ Sam's Club would benefit from a strategic partnership with Home Depot to leverage the home improvement retailer's expanding logistics network.

There are also interesting opportunities for Walmart, Home Depot, and Sam's Club to collaborate on retail, pooling procurement spends on items that each company purchases to

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negotiate lower rates through increased volume, pooling transportation spends to negotiate lower rates, conducting logistics optimization studies to identify shared dedicated fleet moves, and so on.

Patton understood logistics better than any other general in history. I remain convinced that Walmart is missing a tremendous opportunity to create a stand-alone company: Walmart



WALMART NEEDS TO PREPARE TO FIGHT THE NEXT WAR, NOT THE LAST.

Logistics Services. The company would make strategic acquisitions of trucking and last-mile delivery companies to offer third-party logistics services. They would also manage all inbound transportation shipments of products from suppliers to their distribution centers.

I strongly advise Walmart to scour the United States and acquire every abandoned trucking terminal that is available on the market and leverage the properties to develop a rapid transit and delivery network for e-commerce. Walmart should partner with Oracle on exploring opportunities to take trucking to the next level.

Patton would argue that Walmart needs to prepare to fight the next war, not the last. Amazon has already won the e-commerce war, and holds every advantage over Walmart in e-commerce.

Instead of buying a platform such as Jet.com and integrating aspects of it into Walmart.com, I believe Walmart should have acquired Shopify. Why? Because



WHY WALMART'S ACQUISITION STRATEGY WON'T WORK

I strongly disagree with president and CEO of Walmart eCommerce U.S. Marc Lore's strategy of pushing the retailer to acquire digitally native brands such as Bonobos, Moosejaw, and ModCloth. In my view, Lore wants Walmart to create its own version of the "Everything Store," where hundreds of millions of products are available for sale online. I disagree with this strategy for three reasons:

1. Amazon is the clear leader in online retail. Research shows that Amazon accounts for 40% (some statistics show more than 50%) of online retail, whereas Walmart accounts for only 4.7%.

Walmart would have to spend billions just to close the gap with Amazon, so it would be wise to invest their capital elsewhere.

2. Walmart specializes in shipping pallets of products to distribution centers, and from distribution centers to stores. Walmart's supply chain and logistics network is focused primarily on shipping pallets costeffectively, not picking individual products from cases to ship directly to consumers.

The amount of capital required for Walmart

it would allow Walmart to enable commerce for hundreds of thousands of small sellers who want to avoid Amazon. Even Walmart could have been a storefront on Shopify.

The real value to owning Shopify is that Walmart could leverage its best-inclass logistics prowess to create a low-risk, high-value fulfillment ecosystem

to build a network of e-commerce-specific fulfillment centers capable of providing same-day or next-day delivery of millions of products would be a Herculean task.

For example, Walmart operates 150-plus regional distribution centers focused primarily on shipping pallets of general merchandise, and only 20 fulfillment centers focused on e-commerce.

By contrast, Amazon operates 110 distribution centers in the United States and more than 300 fulfillment centers globally, giving Amazon an insurmountable advantage in e-commerce and distribution.

3. Acquisitions should be strategic. Buying online brands like Bonobos, Moosejaw, and ModCloth, which have minimal

name recognition and a customer base far outside the norm of Walmart customers, simply doesn't make sense.

By contrast, imagine if Walmart acquired Duluth Trading Company (DTC). DTC would be a perfect fit for Walmart and its core customer. (I know, I know. The goal was to attract more high-end customers. Sorry, they're already shopping at Amazon.)

Another acquisition that I believe Walmart should assess is Dollar General. Will there be cannibalization of some stores if Walmart acquired Dollar General? Yes.

Over a period of one to two years, however, the store network could be rationalized, with closed stores converted to e-commerce fulfillment centers or re-purposed for other retail needs.

utilizing internal assets and a network of Walmart-managed strategic third parties to fulfill orders to customers. Walmart could collaborate to create a massive distribution network across the United States, all the while not competing directly with Amazon. I encourage Walmart to pursue discussions with Shopify. e-Doc No. Service Mode Company Name Allow Partial Load Carrier Contract Party Telephone Service Contract Party Telephone Service Contract Party Telephone Service Contract Party Telephone Service Doc No. B/L No. Contract Party Telephone I-B/L Carrier Contact Office Service Type Place of Receipt Carrier Contact Office Telephone B/L Issue Place Service Type Place of Receipt Cargo Ready Date Service Type Place of Receipt Cargo Ready Date Service Type Place of Receipt Cargo Ready Date Service Type Place of Receipt I-Dispatch e-Doc No. B/L No. Telephone Carrier Contact Office Cargo Ready Date Service Mode Service Type Place of Receipt I-Dispatch e-Doc No. B/L No. Telephone Carrier Contact Office Cargo Ready Date Contract Party Service Mode I, B/L Suber Place of Delivery Flace of Receipt I-Dispatch e-Doc No. I-Dispatch Telephone I-B/L Service Mode Contract Party Service Mode Contract Party

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DOES ANYONE HONESTLY THINK AMAZON IS AFRAID OF WALMART'S E-COMMERCE EFFORTS?

Food is the new oil. Walmart must engage in strategies that will influence consumer behavior by introducing new services. An interesting option would be for Walmart to partner with Zume to design and implement the next-generation fresh food supply chain and revolutionize fresh food delivery to consumers. Fleat Network is another company Walmart should partner with.

Patton would point out the growing importance of health care in a country with an aging population, as well as growing interest in health from millennials and Gen Z. He would encourage Walmart to establish partnerships with hospitals, clinics, specialty clinics, and nutrition centers and open these types of facilities inside Walmart stores.

I am convinced that grocery stores will be severely disrupted in the United States during the next 10 to 15 years. Walmart would be wise to identify a strategy for converting its retail space for groceries into high-margin leases. Crazy as it sounds, the future of Walmart may be a leading real estate play for health care.

Opening gaming centers inside Walmart stores is another option the company should consider. I am amazed that Walmart doesn't do more with gaming.

Patton would make the argument that instead of trying to deliver only groceries and general merchandise to consumers, Walmart should design and implement a strategy to "own the home." In essence, Walmart should acquire the company Enjoy and offer consumers services for setting up smart homes and learning how to use their devices.

Walmart could also provide its own appliance home repair capabilities. The company should seriously consider partnering with Best Buy to open Geek Squad counters inside Walmart stores, or partner with Enjoy to create a better version of Geek Squad.

Patton would greatly reduce Walmart's global presence in the 77 countries where it currently has operations and instead focus capital in key regions: North America (United States, Canada, and Mexico), China, and India.

Patton's real genius was that his tactics emphasized violent action and speed to exploit every possible opportunity on the battlefield to kill more enemy soldiers and/or seize strategic locations. Patton preferred to attack and force the enemy he was fighting to react to his plans rather than the reverse.

I challenge anyone to come up with a single example where Walmart has forced Amazon to react to anything. Does anyone honestly think Amazon is afraid of Walmart's e-commerce efforts?

Patton would point out to Walmart's executive team that they're overlooking the possibility of Alibaba making a largescale strategic pivot into the United States—for example, acquiring a retailer and leveraging Alibaba's prowess in supply chain, logistics, and last-mile delivery to wreak havoc. Imagine if Alibaba signed a strategic partnership with Aldi? Or acquired Albertsons, Kroger, or Costco?

Patton would focus executives on creating a new game for retail versus implementing strategies that Amazon implemented years ago. As I stated earlier, Walmart appears to be fighting the last war instead of taking the lead in being able to fight the next war. Walmart must find a way to knock Amazon back on its heels.

THE SAND IS SLIPPING THROUGH THE HOURGLASS

Patton isn't the CEO of Walmart and never will be. However, there are lessons to learn when contemplating what Patton would do if he was the CEO.

McMillon must step back and evaluate Walmart's strategy. Losing \$1 billion to \$2 billion annually on an e-commerce strategy that has no chance of putting a dent into Amazon isn't sustainable or necessary.

This doesn't mean giving up on e-commerce or digital. It simply means identifying the exact e-commerce strategy that will meet the needs of Walmart's customers and increase the company's chances of providing a better customer experience and increasing market share.

One final comment—there is only one "Everything Store" and that's Amazon. Walmart doesn't have to beat Amazon at its own game. The retailer needs to create a new game and force Amazon to play on its terms.

Going head-to-head against Amazon in e-commerce is certainly bold. It's also the wrong strategy.



ABOUT THE AUTHOR Brittain Ladd is a globally recognized expert in strategy, digital supply chain management, operations, and M&A.





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THE Ultimate CHECKLIST CHECKLIST Joh SHIPPERS

Essential Things to Include in Every Bid

When it comes to creating a successful request for proposal (RFP), it's all about dotting your i's and crossing your t's. The clearer your RFP, the easier it will be for third-party logistics (3PL) providers to understand your requirements and provide

the information you need to make an informed selection.

INFORMATION PROVIDED BY FLS TRANSPORTATION

RFI... RFQ... RFP...

Depending on where and with whom you work, you may have heard these terms before, often interchangeably. Actually, each of these terms means something different and serves a specific purpose. Let's start by defining each term.

REQUEST FOR INFORMATION (RFI)

The purpose of a request for information, as the name suggests, is to gather information about the qualifications, capabilities, and services offered by freight carriers. An RFI is not a request for a proposal or quotation. It does not obligate you to any company that responds.

Use an RFI to determine which companies to invite to the RFP stage.

Include current partners and identify new candidates by tapping into your network or searching online. Be prepared to award contracts to new players if they meet your requirements through the RFP process. Rotating carriers and expanding your network to qualified vendors helps you build credibility and increases your reach in the marketplace.

An RFI is usually a precursor to an RFP, though in some cases it may be followed by an RFQ.

Ρπο Τιρ

Don't make the RFI too onerous to answer, or carriers may not bother responding.

REQUEST FOR QUOTATION (RFQ)

While the terms RFQ and RFP are often used synonymously in transportation, they are different. A request for a quotation can either come as part of an RFP or as a standalone template to be filled out.

Standalone RFQs are used when you are requesting a service that is standardized—for example, shipping a full truckload from Toronto to New York—or for basic commodities where you're mainly looking to select a vendor based on price.

TAKEAWAY

An RFQ is usually used to award a standardized service such as a regular lane or spot quote.



REQUEST FOR PROPOSAL (RFP)

A request for a proposal is a formal call to transportation companies to provide detailed proposals to meet your shipping needs. Therefore, it is important that your RFP document be granular and specific about what you need.

A bad RFP is ineffective, incomplete, creates more questions than it answers, and wastes time and financial resources for all parties involved.

A well-produced RFP receives complete, innovative responses and provides the opportunity to compare and contrast information on an equal level across all submissions. A typical RFP can be broken down into three general sections:

- 1 Information that you provide
- 2 Information that you request
- **3** Supplemental information such as bid forms

Рпо Гір

It typically takes 2-3 hours to review a single proposal, so avoid sending your RFP to too many companies or you risk getting overwhelmed. Moreover, candidates may be less inclined to apply if they feel the competition is too great.

THE RFP FRAMEWORK

All RFPs are different. This is true.

However, all successful RFPs have one thing in common: They provide the necessary information required to solicit high-quality and accurate responses from bidders.

A successful set of responses is predicated by delivering an RFP that allows you to collect the important information you need, and it allows vendors to communicate how they can help you. You accomplish this through structure and framework.

Here are 13 critical components to include in your transportation RFP. Use this framework and you'll produce the winning responses you're after.



THE INTRODUCTION

Your company and your shipping needs are unique. Don't overlook the introduction section.

Take a minute to introduce your company to potential bidders and provide some basic background information to help them better understand you and your distribution needs.

Is your business cyclical? Is it steady? How and why do you serve your customers? It's important to share an overview of all products and commodities to help your transportation providers know what to expect throughout the year.

THE BUSINESS NEED

A thorough description of the scope of work and your business needs will allow transportation providers to deliver customized solutions that best match your shipping needs.

Moreover, by making bidders aware of your needs and requirements upfront, you reduce the risk of awarding contracts to a transportation provider who may not be the right fit. Give your transportation partners an idea of who your customers and vendors are and how they operate.

If you are operating on a just-in-time (JIT) model with time-sensitive freight, these details are paramount to picking the right partners on each lane. What about deliveries to ports where if anything is late you are literally missing the boat? Will a production line shut down if products don't arrive on time? Are construction crews sitting around waiting for product to arrive for installation? Is a new location opening, and if the product doesn't arrive on time is the grand opening canceled? Are there late fees for deliveries that don't show up on time?

Sure, these things will be covered by your contract and accessorials, but make sure to spell out the "why."

THE MANDATORY REQUIREMENTS

If you're conducting an RFP, you'll likely receive 10-12 bids. This sets up a lot of work for you and your team. Your RFP needs to have a list of mandatory requirements that can be used to qualify or disqualify bidders easily.

For example: Do you require any specific license or certification? What about technology requirements (EDI/ API)? Ask for a safety record and claims rate. Make sure they provide cargo and cargo theft insurance. What about liability and other insurance? Specify what you require. Keep certificates on file. Include "definitions" for every requirement to ensure that all parties share a common understanding.

THE PRE-QUALIFICATION QUESTIONNAIRE

If an RFI was not conducted to qualify bidders, use a pre-qualification questionnaire. Make sure your questions are clear. Avoid repetition. And leave enough space for bidders to provide an adequate response.

While your questions will depend on the business needs you outlined during the planning phase, some examples are:

- Ask for business history
- Ask for coverage area
- Ask about fleet and network size
- Ask to see the motor carrier number, certifications, DOT and safety ratings, and claims records
- Ask about insurance coverage and their approach to risk management
- Ask about their continuous improvement methodology (e.g., Six Sigma, total quality management) and commitment to innovation





5 THE TERMS & CONDITIONS FOR SUBMISSION (AND DOING BUSINESS)

There should be no confusion surrounding your terms and conditions. State them explicitly. Mention which are negotiable.

- Your RFP should include:
- General terms and conditions (GTCs)
- Payment and billing terms
- Standard operating procedures (SOPs)
- Contract terms and service-level agreement and contract duration if the contract is awarded

For example, be sure to include things like acceptance rates, on-time pickup rules, on-time delivery requirements, and technology requirements. This should include the business rules and a copy of your service agreements (contracts).

 \mathcal{Pho} \mathcal{Tip} Include a copy of the contract in your RFP. This will keep you from having to negotiate terms after you've awarded business.

6.

THE SCOPE OF WORK, AKA DETAILED FREIGHT CHARACTERISTICS (WHAT, WHEN & HOW MUCH)

This is the core section of your RFP—the meat and potatoes. It's generally what shippers and transportation providers think about when you say "RFP." For the scope, it is incredibly important to provide as many details as you can on your freight.

TAKEAWAY

Transportation providers need to know the following eight freight characteristics to provide an accurate quote:

- 1 Commodity types
- 2 Average weight per load
- **3** Cargo value
- 4 Primary and secondary equipment types
- **5** Clear instructions on the lanes up for bid
- **6** All ZIP and postal code (origin and destination) information for all lanes
- Freight volume for each lane and frequency of shipments
- 8 Seasonality or variability

THE ULTIMATE RFP CHECKLIST FOR SHIPPERS

Determine your business requirements.

Gather the essential internal data necessary to build the RFP.

Conduct an RFI to determine which companies to invite to the RFP stage.

□ Include three key sections in your RFP: information that you provide, information that you request, and supplemental information such as bid forms.

□ Provide background information on your company in your RFP to help bidders better understand you and your distribution needs.

Define your business needs to reduce the risk of awarding contracts to a transportation provider who may not be the right fit.

□ Include a list of mandatory requirements that can be used to easily qualify or disqualify bidders.

Include a pre-qualification questionnaire.

□ Include the GTCs, payment and billing terms, SOPs, and a contract in the RFP.

Don't forget to include the freight characteristics needed to provide an accurate quote.

□ Make sure your bid sheet contains detailed lane information as well as freight volume and frequency, including historical data and total estimated volume.

Do you have any special requirements? Include them in your RFP.

Specify all accessorials in your RFP.

Set a timeline that includes key dates.

Create a single point of contact for questions and concerns.

□ Provide clear instructions on response requirements, response format, submission mechanisms, and submission questions and feedback.

Highlight your evaluation criteria clearly.

Specify the KPIs you will use to measure performance.

□ Verify that your RFP is clear and concise.

□ Obtain approval from decision-makers and review to ensure it is error-free.

Check the market and your production schedule to verify that the timing is right to send your RFP.

THE COMPLETE KPI WORKSHEET

	MONTHLY		CUMULATIVE	
	TARGET		TARGET	ACTUAL
1: SERVICE PE	RFC	DRMA	ANCE	
On-time pickup/delivery rate				
Delivery on time in full				
Load acceptance/ rejection rate				
Claims percentage for freight costs				
Average loading and unloading times				
Average dwell time				
Length of time between tender and scheduling a pickup appointment				
Transit time to distance				
Border delays				
Average number of deliveries made per driver/truck/route				
Carrier rate benchmarking by lane				
Planned time in transit versus actual				
Routing guide compliance				
Percent EDI invoices				
Quality of service scores				
2: RATE MAN	AGE	MEN	Т	
Perfect shipment measurement				
Fuel efficiency				
Accessorials as a percent of freight				
Average transportation cost per mile/volume/ weight				
Detention				
3: FINANCIAL	. INC	DICAT	ORS	
Quote to invoice accuracy				
Supply chain costs as a percent of revenue				
Freight transportation expenses as a percent of revenue				
Average cost per skid/ order				
Damage rates/cargo loss				

7 The pricing or bid template

A pricing or bid template lets you compare bids easily. Your bid sheet should include detailed lane information as well as freight volume and frequency, including historical data and total estimated volume.

Put yourself in the driver's seat by providing a standard template to harmonize rate structures so you can make an apples-to-apples comparison. To make it easy on yourself and your bidders, you may want to put this in Excel format.

8

THE FUEL SURCHARGE

Be upfront about what you're comfortable paying for fuel surcharges. The more specific you are upfront, the easier it will be to find a compatible partner during the selection process.

Fuel surcharges as determined by the Department of Energy can fluctuate significantly during a calendar year. Make sure to specify if you will be basing this surcharge on the national average updated every Tuesday at 8 a.m. CST, or if you will provide your own fuel schedule. Also, be strategic on how you are fielding rates from your providers. Are you requesting rate per mile excluding or including fuel?

9 THE EXTRAS (ACCESSORIALS)

Do you have any special requirements? After- or beforehour deliveries? Blind shipments? Detention? The easiest way to avoid nasty surprises when you receive your final freight bill is to state any extra needs you may have upfront that apply to both shippers and receivers.

Be clear in both the definition and fees for your accessorials. This will help with rules of engagement and avoid invoicing issues down the road.





10 THE DEADLINES & POINT OF CONTACT

Set a timeline for your RFP to be completed.

TAKEAWAY

Be sure to cover these nine key dates for every RFP:

- 1 Bid opening date
- 2 Questions due date or information conference call
- **3** Deadline for first rate submission (due date): Make sure you're giving bidders enough time to put together a good bid proposal response. The timeframe depends on how many lanes/type of freight/number of stops on lane.
- **4** Feedback date: Are you providing feedback after the first submission? This not only helps you get the best rates, but also gives your transportation providers more intel on the lanes for which they can provide the best service.
- **5** Deadline for second rate submission
- 6 Final negotiations date
- **7** Notice of award date
- 8 Go-live date
- 9 Contract length of commitment and renewal options

 \mathcal{PhO} $\mathcal{T}\!i\!\rho$ Provide a single point of contact to address questions and concerns.

THE SUBMISSION PROCESS

Describe the overall RFP bidding process. Include clear instructions on response submission requirements, response format, submission mechanisms, and how to submit questions and feedback.

- Email
- Web-based TMS submission
- Submission to 4PL/consultant

12.

THE EVALUATION CRITERIA

Highlighting your evaluation criteria will allow transportation companies to lay out the information you're looking for, making it easier for you to compare and pick the best 3PL partner.

Be honest and open; if incumbents will be given special consideration or be part of the first round of negotiations or if it is a one-bid round with key lane negotiations among incumbents, state it clearly.

Bidders will appreciate the transparency. If you avoid mentioning these details, you risk losing out on bids from companies who question the authenticity of the process and whether they stand a chance.

 ${\it Pho}~{\it Tip}~$ Always select back-ups. Anywhere between two and four should do.



THE PERFORMANCE INDICATORS (KPIs)

Make your performance expectations explicitly clear. Ask for current metrics to ensure potential transportation partners have performance tracking and reporting capabilities. On-time performance? Acceptance rate? Claims rate? Specify your KPIs as they can be rolled into your service-level agreement as part of your service contract.



STEP-BY-STEP GUIDE TO EXECUTING YOUR RFP

The quality of responses you receive is directly proportional to the amount of time you spend planning and writing your RFP.

Think of your RFP as more than a document to award shipping contracts; it is the product of a lengthy, but important, process that can be overwhelming if you're not familiar with the steps involved.

But, don't worry, we've got you covered. Let's walk through the RFP process from start to finish, step by step.

STEP #1: PLAN YOUR WORK SO YOU CAN WORK THE PLAN.

YOUR RFP PLANNING

The planning stage is the most important part of the RFP process and should not be rushed. It is essential that the planning phase involve a cross-functional team of stakeholders. Together you must come to a complete understanding of your business requirements and then clearly state them in your RFP and eventual contract.

 $\mathcal{Pho}\ \mathcal{Tip}$ If the goal of your RFP is to exert pressure on your current partners to obtain a better rate, you may be doing yourself a disservice. If carriers/brokers/3PLs determine that your RFP is not genuine, you risk damaging your reputation as a shipper, and your future RFPs may not be taken seriously.

TAKEAWAY

- The 16 planning questions you need to answer:
- 1 What do you hope to accomplish through this RFP?
- 2 What are your estimated cost-saving goals?
- **3** How will you measure success?
- **4** What operational efficiency are you looking for?
- **5** What sort of technology requirements do you have? EDI? Real-time updates?
- 6 Are you looking to add or reduce carriers?
- **7** How many bid rounds will you have?
- **8** Will it be an open bid or invite only? How will you choose who to invite (RFI)?
- **9** Are you going with asset only or will you include non-asset-based brokers?
- **10** Are all lanes up for bid or are certain lanes reserved (asset only, incumbent, etc.)?
- **11** Are you going to package or bundle lanes? How will you evaluate this?
- 12 Will incumbents be given special consideration?
- 13 What's your RFP timeline? Key due dates?
- 14 How will you communicate the release of your RFP?
- **15** Who will manage the responses when they come in?
- 16 How will you evaluate and award lanes?



STEP #2: READY. SET. DATA.

RFP PREPARATION

Once you've taken the time to answer the questions in Step 1, you need to gather the necessary data to prepare your RFP. The better the data you provide to carriers/3PLs in your RFP, the better the responses you will receive.

TAKEAWAY

The seven pieces of data you need to know:

- 1 Detailed lane data
- 2 Expected freight volume and shipping frequency by lane
- **3** Any special equipment requirements
- 4 GTCs—if your company doesn't have its own GTCs, take time to draft them
- Delivery appointment requirements, shipping and/or receiving hours, and facility profiles
- **6** Current cost structures and pricing templates—so you can benchmark the proposals you receive
- **7** Selection criteria and KPIs

Clearly define and spell out all operational, functional, service-level, technical, and financial requirements in your RFP.

 ${\it Pho}~{\it Tip}$ Include as exhibits all essential elements that require a response from carriers/3PLs. This makes it easier to spot and respond.

STEP #3: TEAMWORK MAKES THE DREAM WORK.

RFP REVIEW, REVISION, AND APPROVAL

Your RFP needs to be clear and concise. After compiling, review for grammar, format, objectives, and instructions. The quality of your RFP is a direct reflection of your organization and should be written to the highest standards.

After you review, edit, and re-edit your RFP draft, it is ready to be approved by all decision-making stakeholders.

STEP #4: FIRE AWAY.

RFP ISSUE AND SUPPORT

Once approved, the RFP is ready to be issued. You can send out your RFP in a number of ways: by email, through a web-based portal, or through a consultant (if you're working with one). If you use email, instruct the carriers/brokers/3PLs to reply to your email as acknowledgment of receipt.

If you conducted an RFI as a precursor to your RFP, limit your RFP to qualified respondents only. If you didn't conduct an RFI, include a qualification questionnaire with your RFP, which will allow you to quickly screen for transportation providers that don't meet your requirements.

Make sure you've assigned a point of contact who can respond to any questions or concerns.

 $\mathcal{Pho}\ \overline{\mathcal{Ii}\rho}\$ Timing is everything when sending out your RFP. If you send out your RFP in the winter months, you may get better rates as everyone is looking for freight. It's also best to onboard a new provider on lanes outside of busy summer months.





STEP #5: COLLECT & ANALYZE.

RFP RESPONSE EVALUATION & CLARIFICATION

Once you receive all responses, it is time to evaluate the proposals. You can assign this step either to a team or an individual.

Read each proposal first, flagging those that violate directions and/or those that don't meet minimum requirements. Checking for compliance is an easy way to short-list responses to only those that would make good partners.

On the second read, score the responses on the selection criteria you included in your RFP. If you provided an RFQ template or price template, you should be able to easily compare responses apples to apples.

Scoring can vary from company to company and can range from simple to highly complicated. One approach is to weight all sections so that they add up to 100%. Within each section, assign points from 0-10 (where 0 is unacceptable and 10 is outstanding) to each criteria component according to the degree to which the proposed solution meets your stated requirements. Compile the results.

If you need clarification on any information received, reach out with your questions in writing. Allow the carrier/3PL at least three business days to adequately respond. Re-score if necessary.

STEP #6: AWARD THE BID.

RFP SELECTION AND CONTRACT NEGOTIATION

At this stage, you need to set meetings to close the deal and sign contracts with the vendors of choice. If you included contract terms and GTCs with your RFP, this process should be simple. If you didn't, you will enter into final negotiations. It is considered good practice to notify both successful and unsuccessful participants once the RFP process is complete.

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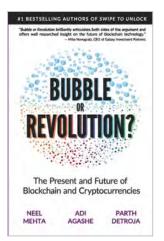
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WINTER READING GUIDE

BY JACLYN IX



BUBBLE OR REVOLUTION?

The Present and Future of Blockchain and Cryptocurrencies

BY NEEL MEHTA, ADI AGASHE, AND PARTH DETROJA

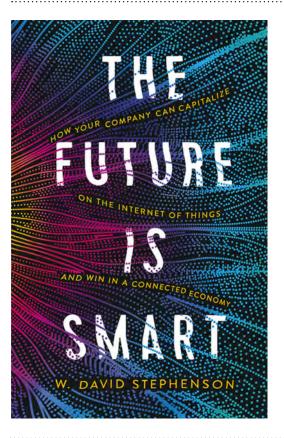
Are cryptocurrencies and blockchain operating inside a bubble, or are they revolutionary? Some say that these emerging technologies are innovative advancements while others are more skeptical. This book offers a balanced and comprehensive analysis of blockchain and cryptocurrencies, breaking down the concepts and using realworld case studies to analyze their strengths and weaknesses. Interviews with tech industry leaders provide first-hand insight into the future of these technologies.

THE LOGISTICS AND SUPPLY CHAIN TOOLKIT

Over 100 Tools for Transport, Warehousing, and Inventory Management

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THE FUTURE IS SMART

How Your Company Can Capitalize on the Internet of Things and Win in a Connected Economy

BY W. DAVID STEPHENSON

From smart watches that track real-time health data to responsive kitchen appliances, the Internet of Things is embedded in day-to-day life. Consumer products are just the beginning-leading companies are preparing to use data sensors to track management, strategy, manufacturing, and maintenance. This book explains how businesses are tapping into technology not only to optimize their supply chains, but also to boost safety, reduce waste, and make customers happy.

BILLION-DOLLAR BRAND CLUB

How Dollar Shave Club, Warby Parker, and Other Disrupters Are Remaking What We Buy

BY LAWRENCE INGRASSIA

Entrepreneurs find new and creative ways to tap into the products people use every day. Taking a ride on the New York City subway or simply listening to a commercial break during your favorite podcast will introduce you to a wave of new brands disrupting everything from eye wear to mattresses. Learn how startups, entrepreneurs, and venture capitalists are taking on companies that have dominated the consumer economy for more than a century.

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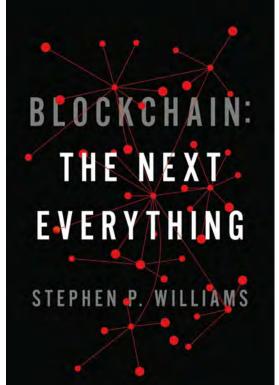


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BLOCKCHAIN: THE NEXT EVERYTHING

BY STEPHEN P. WILLIAMS

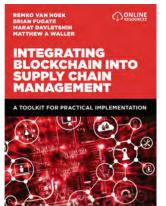
Exploring the systems predicted to change economics, global trade, science, politics, and art, this accessible guidebook explains how blockchain technology can radically transform the world. Using anecdotes, metaphors, and clear descriptions for readers who aren't tech savvy, this introduction to blockchain explains its most important aspects: why it can't be hacked, how it empowers ordinary citizens, and what its widespread use means for society.

INTEGRATING BLOCKCHAIN INTO SUPPLY CHAIN MANAGEMENT

A Toolkit for Practical Implementation

BY REMKO VAN HOEK, BRIAN FUGATE, MARAT DAVLETSHIN, AND MATTHEW A. WALLER

Blockchain can provide real-time visibility and insight into the supply chain process. After learning what this emerging technology can bring to the table, it's time to evaluate how it may work for you. This book provides step-by-step guidance for integrating blockchain into your supply chain. Tools, frameworks, and case studies—along with a benchmark survey showing current blockchain use in supply chain management—show readers how to take an informed, business-savvy approach to blockchain.





ESSENTIALS OF INVENTORY MANAGEMENT

BY MAX MULLER

Go beyond the organized stockroom and master the fundamentals of inventory management. These concrete steps can help you project your future business needs, minimize costs, and fix supply chain problems. Charts, review questions, and formulas help explain concepts such as tracking inventory costs, calculating gross profit, deciding when to eliminate dead stock, and choosing the best location for a distribution center, giving you the tools to achieve optimal efficiency.



THE FUTURE IS FASTER THAN YOU THINK

How Converging Technologies Are Transforming Business, Industries, and Our Lives

BY PETER H. DIAMANDIS AND STEVEN KOTLER

Technological acceleration is rapidly changing the world. What will happen to the way humans govern nations, raise children, and care for the planet in the next decade? This book is a roadmap for how future waves of technology may reinvent day-to-day life as artificial intelligence, robotics, and virtual reality converge with 3D printing, blockchain, and global networks. It also explores how legacy industries, such as transportation, retail, health care, and entertainment, may transform in the process.



DISTRIBUTORS & CONSOLIDATORS OF AMERICA



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LETTER WORD

How Six Everyday

Products Make the

Case for Trade

FRED P. HOCHBERG

TRADE IS NOT A FOUR-LETTER WORD How Six Everyday Products Make the Case for Trade

BY FRED P. HOCHBERG

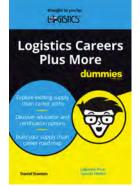
Trade lowers prices and spurs variety and innovation, but understanding the entire global trade network is not so simple. This book uses six everyday products with surprisingly compelling backstories to explain how trade has shaped modern life: the taco salad, the Honda Odyssey, the banana, the iPhone, the college degree, and the HBO series *Game of Thrones*. Using colorful examples and digestible explanations, this entertaining read dispels common myths and provides a thorough understanding of the basics of trade.

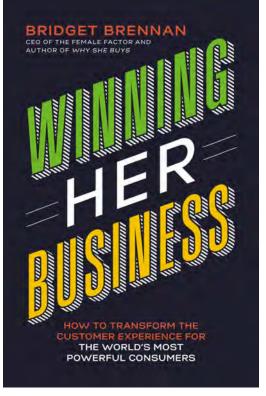
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LOGISTICS CAREERS PLUS MORE FOR DUMMIES

BY DANIEL STANTON

Using simple, practical language, this guide explains how to plan and manage a successful logistics career at any stage of professional development. Operations, logistics, and procurement are interconnected parts of a larger system, which offers diverse career opportunities. This book shows readers the entire range of skills required for professionals at every point of the supply chain, and how each of those roles affects colleagues, customers, and suppliers.





WINNING HER BUSINESS

How to Transform the Customer Experience for the World's Most Powerful Consumers

BY BRIDGET BRENNAN

Retailers can beat the competition by appealing to today's most powerful consumers: women. Women drive 70% to 80% of consumer purchases, but the usual sales practices aren't reaching them. Based on more than

a decade of research, this book offers invaluable insight into women as

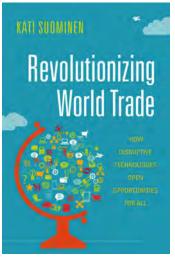
consumers, and explains how an inclusive customer experience can benefit everyone. Businesses can deliver transformational customer experiences that speak to women by focusing on interpersonal skills, value-added knowledge, and emotional-engagement techniques that generate sales, referrals, and repeat business.

REVOLUTIONIZING WORLD TRADE

How Disruptive Technologies Open Opportunities for All

BY KATI SUOMINEN

As global trade approaches a new era, businesses are more empowered than ever, thanks to technological developments in trade and global production. Emerging tools and possibilities within digitization and trade, however, are being stifled by policy changes and outdated regulatory frameworks. This book examines these conflicting players and envisions new policies that may help catalyze global growth and development.





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LEIGH SPARKS

LOGISTICS AND RETAIL MANAGEMENT STREDITOR

EMERGING ISSUES AND NEW CHALLENGES IN THE RETAIL SUPPLY CHAIN

LOGISTICS AND RETAIL MANAGEMENT

Emerging Issues and New Challenges in the Retail Supply Chain, Fifth Edition

BY JOHN FERNIE AND LEIGH SPARKS

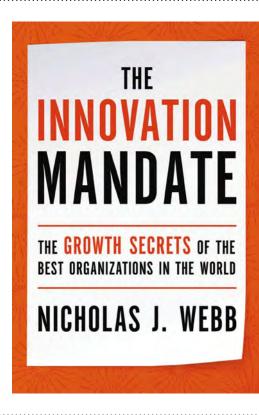
Sound logistics and supply chains are key for successful retail management. Updated with new developments in the field, this book illustrates the progress of retail logistics and the challenges that remain. It covers topics such as internationalization, corporate social responsibility, and green logistics, and reviews examples of successful organizations. This new edition also provides information on the luxury fashion industry and the unique logistical challenges of e-commerce.

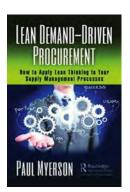
THE INNOVATION MANDATE

The Growth Secrets of the Best Organizations in the World

BY NICHOLAS J. WEBB

For companies of all sizes and stages, innovation can be the difference between success and failure in today's competitive marketplace. Innovation helps companies introduce new products, better connect with their customers, hone their supply chain, and hire the right people. This book provides a step-bystep process for continually generating and implementing great ideas, and maximizing their value to benefit customers and investors. Use the five-point checklist to ensure your company is innovation-ready and learn how to achieve profitable innovation.





LEAN DEMAND-DRIVEN PROCUREMENT

How to Apply Lean Thinking to Your Supply Management Processes

BY PAUL MYERSON

With a focus on improving processes rather than simply cutting material costs, this book helps readers identify supply-side waste, especially in the realm of procurement, using Lean principles. The author details basic supply chain concepts and processes in a digestible format, providing process-improvement tools, methodologies, best practices, examples, and case studies. Learn how identifying nontraditional sources of waste through improved processes and, occasionally, technology can benefit your entire supply chain.



OPERATIONS AND SUPPLY CHAIN MANAGEMENT 16th Edition

BY F. ROBERT JACOBS AND RICHARD B. CHASE

Modern businesses must continually analyze and optimize their supply chain processes. This newly updated text covers current issues affecting the industry, with a focus on the global economy. Relevant analytical data, real-world problemsolving strategies, and hot topics help readers understand the bigger picture. From manufacturing and service processes to sales planning and the Internet of Things, this book provides a wide base of supply chain knowledge.



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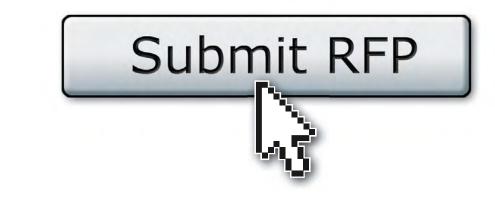
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[IN PRACTICE]



Formulating a Predictive Flow

THE CUSTOMER

BASF Corp., headquartered in Florham Park, New Jersey, is the largest affiliate of BASF SE and the second-largest producer and marketer of chemicals and related products in North America.

THE PROVIDERS

Frisco, Texas-based Transplace is a transportation management services and logistics technology provider. The Descartes Systems Group Inc., Waterloo, Ontario, is an on-demand, software-as-a-service solutions provider for logistics-intensive businesses.

by Jennifer Baljko

BASF Corp.'s vision for the next six to 12 months is to continue to move from a proactive approach to predictive logistics and shipping operations. It expects operations to be about 80% predictive in 2020.

But even that doesn't go far enough these days. BASF's customers want the company to stretch further into predictive supply chain and logistics practices, and to move data analytics beyond visibility toward insightful information that improves overall planning, scheduling, and communications.

The Florham Park, New Jerseybased chemical company, and the North American affiliate of BASF SE, Ludwigshafen, Germany, is now on the journey toward creating more predictability. It has not been an easy ride, but it has advanced the company's transportation strategy in notable ways, including improved shipping notification practices, on-time delivery scheduling, and automated customer communication processes.

STARTING FROM HERE

According to BASF, it is the secondlargest producer of chemicals and related products in North America with \$19.7 billion in sales in 2018, representing 27% of BASF SE's €63 billion in global sales. With 20,000 employees regionally, it produces thousands of chemical, petrochemical, and construction and building materials, as well as industrial, automotive, and agricultural SKUs at about 100 production sites in North America.

The company has more than 350 shipping locations in the United States, Canada, and Mexico, and makes roughly a half million surface shipments by rail, truck, and bulk annually. Shipments go either direct to the customer out of BASF's manufacturing locations, or they pitstop at a distribution center and then are routed onward to the customer.

Coordinating product deliveries and a transportation network of that scale is a challenge. Coordinating this with consistent precision and accuracy, now with predictive capabilities, is easier with the right technology solution, as BASF discovered.

BASF relies on Transplace's transportation management system and Descartes' MacroPoint visibility solutions to help it keep pace with customers' requirements.

"In the transportation space, the biggest issue — and the biggest journey we have been working on jointly with Transplace is moving from being a reactive operation to a proactive one," says Alex Obelink, BASF's director of transportation management. "Eventually, we want to be a predictive operation where we can reduce the number

CASEBOOK STUDY

Going Proactive

CHALLENGE

BASF Corp. faced rising customer demand for increased supply chain and delivery visibility and proactive notification of offschedule shipments. The company also wanted to boost productivity and improve delivery reliability with its transport providers.

SOLUTION

BASF turned to long-time partner Transplace to integrate real-time freight tracking capabilities into its Transplace TMS. The Descartes MacroPoint solution provides this visibility.

RESULTS

- Moved from reactive to proactive notifications, and now migrating to predictive shipping notifications.
- Initial proactive notification rate when it began the project with Transplace was 15% to 20%. Now it's higher than 80%.
- An average of 5% to 6% on-time delivery improvement each year, resulting from the Transplace/ Descartes implementation, continuous data cleansing, and other operational activities.
- Eliminated manual checks and calls to carriers, automated customer communication for late deliveries, reduced transportation costs, and allowed for a single aggregation point for carrier visibility through the Transplace Control Tower.

NEXT STEPS

BASF plans to continue to move from a proactive approach to predictive logistics and shipping operations. It expects operations to be about 80% predictive in 2020. of process deviations that impact the customer."

Obelink recalls where BASF's logistics operations were just a few years ago. Customers would call to say a shipment was late and wanted to know when it was going to be delivered. At that point, BASF could only react to customer concerns and manually check in with its carriers by making another phone call.

In a competitive world where realtime visibility is becoming a baseline norm, BASF had to find a proactive, automated way to keep customers informed about shipment status.

TAPPING INTO TRANSPLACE

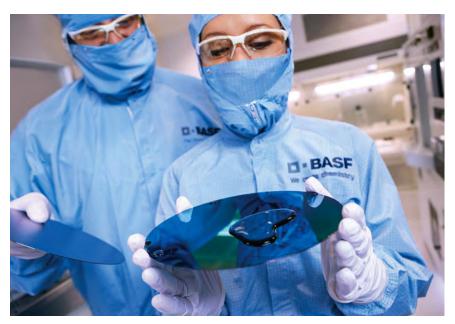
At that point, circa 2017, BASF had been working with Transplace, based in Frisco, Texas, for about 15 years. Since Transplace was fully integrated into BASF's SAP order management system and its own TMS was electronically connected to BASF's carriers, it made sense to tap into the solution provider's expertise to see where else the chemical company could go.

Coincidentally, one of BASF's divisions was also working with The Descartes Systems Group, using the Waterloo, Ontario, provider's MacroPoint solution to increase realtime shipment visibility and manage the notification pings it received from delivery trucks.

The crossover between Transplace's TMS and Descartes' MacroPoint eventually led to the creation of the Transplace Control Tower, which gives BASF a single point of aggregation for carrier visibility, says Steve Barber, Transplace's vice president of product management. And, by mid-2019, the two solution providers announced that Transplace would provide MacroPoint's real-time visibility as a standard feature, without extra transaction or integration fees, for all managed transportation services and TMS customers.

"One big value we bring to our customers comes from our MacroPoint engagement," says Barber. "Descartes' experience with predicting on-time delivery, as well as the carrier engagement and the third-party artificial intelligence (AI) engagement, has helped us increase the number of shipments that can be identified as potentially late and take action on them much quicker.

"We're seeing about a 300% improvement in that general



Moving toward a predictive supply chain has produced multiple benefits for chemical and semiconductor company BASF, including improved shipping notification practices, on-time delivery scheduling, and automated customer communication processes.

identification process over the manual labor process that's required to identify late shipments," he adds.

BASF witnessed the benefit of this collaboration almost immediately.

The company has seen an average of 5% to 6% improvement each year on its on-time delivery rate resulting from the Transplace and Descartes MacroPoint implementation, continuous data cleansing, and other related operational activities, Obelink notes.

Additionally, its initial proactive notification rate of being able to see when shipments would be late and notifying customers in advance was only about 15% to 20% when this project began, Obelink says. Now, 1.5 years later, it's in the mid-to-high 80s.

Obelink acknowledges that the jump from the 15-20% range to the 40-50% range went fairly quickly as the technology helped to smooth out the data feeds. But, getting to a high 80% rate of proactive notification activity took longer because of the expanded need to stitch together various internal and external processes and to include the broader supply chain ecosystem, particularly shipping carriers.

MOVING TOWARD PREDICTIVE SHIPPING

With the proactive notification system mostly in place, BASF is getting ready to migrate toward predictive shipping signals. The company hopes to go beyond identifying and notifying customers of potential red flags to preventing shipment interruptions through deeper analytics and better predictive modeling.

"We want to be able to identify a late shipment before it's late so we can put a plan together and avoid the delay," Obelink says. "We need to figure out how to do something with this information we never had before."

Getting to the predictive stage, however, will require additional time and process evaluation.

"Right now, we are in the proactive stage with BASF," says Barber. "We are looking at transit times, infrastructure delays, and any operational concerns



BASF, which produces and markets chemicals and related products, has deployed the Descartes MacroPoint freight visibility solution to improve the delivery reliability and productivity of transportation providers servicing its North American supply chain.

around a carrier or a business process that maybe didn't get followed precisely, that may include appointment scheduling, a missed pickup or missed delivery.

"We receive those warnings, and then generate the notification," he adds. "We are heading toward the predictive approach, which will have better automated processes to take advantage of the signals coming in. Right now, we're making use of the signals coming in, but it's still a manual process."

Better integrating the carrier data piece may facilitate the transition from proactive to predictive.

"MacroPoint provides connections to carriers, and allows our customers, such as BASF and Transplace, to get that visibility," says Brian Hodgson, senior vice president of industry strategy at Descartes. "They know where the truck is and if the pickup or delivery happened. They also get GPS pings throughout the journey.

"Now we are incorporating the predictive estimated time of arrival (ETA) piece, calculating if the trucks are at risk of being late and what the ETA will be," he adds. The electronic logging device mandate, which requires truck drivers and motor carriers to track and comply with hours-of-service stipulations, has increased carriers' understanding of what data is being sent where and how data sharing improves supply chain transparency and reliability, Hodgson adds.

With lower resistance to data sharing, all partners involved can see how better data flow reduces risk, costs, and uncertainty while improving overall planning.

"As we move from proactive to predictive, we give the receiver more time to respond as well," Hodgson says. "If a truck will be one hour late, they could maybe pull another truck in earlier, get those products unloaded, and free up a dock slot for a later delivery.

"This also increases driver productivity," he adds. "With this approach, they have less detention time, and they're back on the road faster making more money, which is what they obviously want to do."

Obelink says he expects BASF's shipping operations to be about 80% predictive in 2020.



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[IN PRACTICE]

TTOOLKIT

From Sea to Supermarket: Tracking the Catch of the Day

THE CUSTOMER

Bumble Bee Foods, headquartered in San Diego, is one of North America's largest branded shelf-stable seafood companies. It offers a full line of canned and pouched tuna, salmon, sardines, and specialty seafood products.

THE PROVIDER

Enterprise software corporation SAP and its SE Cloud Platform Blockchain and Analytics Cloud solutions.

by Jennifer Baljko

In an age when consumers keep pushing companies to prove their sustainability, social responsibility, and fair trade track record, Bumble Bee Foods is counting on its blockchain project with SAP to earn high marks.

The San Diego-based shelf-stable seafood brand has put the power of supply chain visibility into the hands of its end customers. Shoppers browsing the frozen fish section in some U.S. supermarkets can pick up one of Bumble Bee's Natural Blue Anova yellowfin tuna packets, scan a QR code with their mobile phones, and see the entire history of the fish back to when it was caught by an Indonesian fisherman and received at the processing plant.

"We want to educate consumers on the path their tuna takes, and we offer ways they can do a social audit and see the sustainability aspects of our products," says Tony Costa, Bumble Bee's chief information officer. "The blockchain initiative is a continuation of that."

TRACE MY CATCH

Bumble Bee started its consumerfocused "Trace My Catch" supply chain visibility program in 2015 with its core product, albacore tuna. It eventually extended the program to its salmon and sardine product lines.

At the Trace My Catch section of Bumble Bee's website, consumers input a code from the can or pouch. The site retrieves a long list of information specific to the product including: fish species, fishing method, the ocean where the fish was caught, vessel names and countries, fishing trip dates, and processing location.

The long tail of traceability back to the point of origin is a growing concern among consumers, who began questioning where their food comes from and holding food companies responsible for their supply chain practices.

In parallel to this external uptick in corporate social responsibility momentum, Bumble Bee took a look internally and decided to overhaul its supply chain operations in Fiji, one of the company's prime areas of tuna supply. Through this effort, Bumble Bee was able to capture greater amounts of sourcing data, which started the ripple effect of more efficient reporting, better information-gathering techniques, and increased supply chain visibility much of which could be served up to consumers via the catch-to-can website.

So, in 2014, when Bumble Bee acquired Florida-based Anova Food and began integrating it into the fold, it was clear to company executives that Anova's Natural Blue frozen line would CASEBOOK STUDY

What's the Catch?

CHALLENGE

Bumble Bee wanted to extend its "Trace My Catch" sustainability and traceability program for canned products to its frozen fish brand, Anova. But instead of requiring end customers to type a can's code into a website, the company wanted a more modern approach using mobile phone-scannable QR codes and blockchain technology.

SOLUTION

SAP's Cloud Platform Blockchain and Analytics Cloud services.

RESULTS

- Visibility of Bumble Bee's Anova yellowfin tuna supply to the point of origin in Indonesia.
- Blockchain-enabled traceability of 800,000 cases of product by the end of 2019.
- A collaborative project between Bumble Bee, SAP, the Indonesia government and Ministry of Fishery, and a nongovernmental organization MDPI (Yayasan Masyarakat dan Perikanan Indonesia) focused on achieving responsible and sustainable fisheries activities in Indonesia.

NEXT STEPS

Roll out a similar track-and-trace blockchain project with Bumble Bee Anova's Thai and Vietnamese tuna fish suppliers, and explore ways blockchain can be applied to other Bumble Bee products and brands. Suppliers in Vietnam are already using blockchain for some of the products produced, and the company anticipates onboarding blockchain to suppliers in Thailand by early 2020. also be included in the company's track-and-trace footprint, but with better technology.

"This all started as a supply chain visibility and optimization project," Costa says. "When we acquired Anova, we knew we wanted to expand it to include the Natural Blue product line as well."

During the past few years, Costa visited remote villages in Indonesia, one of the sources of yellowfin tuna, to see how the fish were being caught and how it moved through the processing plant, seafood inspection and health safety facility, and then into a finished good.

COMBATING IUU FISHING

During his trips there, a unique opportunity presented itself. The Indonesian government, the Indonesian Ministry of Fisheries, and MDPI (Yayasan Masyarakat dan Perikanan Indonesia), a nongovernmental organization focused on creating responsible and sustainable fisheries activities in Indonesia, wanted to collaborate on a pilot project. The goal was to use technology-based traceability systems for small-scale fisheries and, over the long term, combat illegal, unregulated, and unreported (IUU) fishing activities.

Indonesia is considered the world's largest producer of tuna with the most abundant tuna fisheries in the world. However, IUU fishing-incurred losses to the country are estimated to be as high as US\$3 billion annually, according to the International Pole & Line Foundation. For several years, the Indonesian government has been taking steps to reshape the fishery sector, and a chance to work closer with Bumble Bee came at the right time.

Bumble Bee's catch-to-can coding system, though, is limited. It requires users to take extra steps to input the code into a website. Costa says the company wanted to take a different approach with Anova's products, and thought scanning a QR code would make the process more efficient all the way through the supply chain.

An important piece also needed upgrading—the underlying technology to expand the kind of visibility Bumble Bee wanted both for its own supply



To learn how Bumble Bee's fish were being caught, Tony Costa, chief information officer (*left*) visited remote villages in Indonesia, one of the sources of yellowfin tuna, and met the local fishermen.

chain and sustainability requirements and for its end customers, shoppers in supermarkets.

Costa thought this phase of the traceability program might be a good use case for blockchain, an advanced technology that could follow all the steps involved from the ocean catch to the consumer's shopping cart. He called SAP for help.

"We wanted transparency all the way back to when the fisherman caught the fish, took it back to shore, and registered his catch with the fish buyers, who take it to the processing plants," Costa recalls. "We thought blockchain might help us provide the level of detail we wanted. I called SAP because of its blockchain expertise."

BETTING ON BLOCKCHAIN

There has been a great deal of hype around blockchain technology and its promised capabilities for everything from cryptocurrencies to, you guessed it, supply chain management.

Blockchain is a database shared across a network of computers; records added to the chain become difficult to change. Blockchain allows companies like Bumble Bee to store data and create a tamper-proof supply chain history. Each participant in the chain can share and see that history, according to SAP.

In fact, Bumble Bee is the first food company to incorporate SAP blockchain technology into its production.

"The supply chain itself is a great source of use cases for blockchain because companies have so many business challenges where this technology can be applied," says Richard Howells, vice president of SAP's Solution Management for Digital Supply Chain group. "The key is to identify these business challenges, add the technology and go from there, not the other way around."

For Bumble Bee, which is dependent on many supply chain pieces beyond its own walls, SAP's Cloud Platform Blockchain and Analytics Cloud services ensure continuous data accuracy and integrity.



To ensure consumers their food is safe and sustainably sourced, Bumble Bee has implemented SAP's blockchain technology. Customers can easily access the complete origin and history of their tuna by using a smartphone to scan a QR code on the product package.

"Bumble Bee has been able to track and trace across its supply chain for a while, but blockchain brings it to the next level," Howells says. "When you don't own the whole of your supply chain and rely on many partners to provide data, blockchain secures the integrity and authenticity of the data from multiple sources, without compromising their private information."

Although Bumble Bee's supply chain is complex and relies on many individual fishers in remote areas and across geographies, layering the blockchain technology into the supply chain and ERP was not too complicated, Howells says. Mobile phones, in fact, are the enablers, allowing people throughout the process to easily add their relevant pieces of information.

SAP and Bumble Bee began designing the project scope and tracking capabilities in September 2018, and by December the pilot program was off the ground. The program officially went live in February 2019, and was announced publicly in March 2019.

By the end of 2019, Costa expected blockchain to have been used to track and trace 800,000 cases of yellowfin tuna products. To date, Anova's Natural Blue fair trade-certified ahi tuna steaks are found in several retail chains, including Albertsons, Hy-Vee, Price Chopper, and Safeway.

Bumble Bee also plans to roll out the blockchain solution to its supply chain practices in Thailand and Vietnam, and Costa sees potential for it to be used across the company's entire product portfolio. By November 2019, some of Vietnam's suppliers were using blockchain on select products, and Thailand was expected to come on board by the end of 2019 or in early 2020.

"The goal is to quickly get this out to the rest of Indonesia, and then bring it to other regions," Costa says. "Technology, in this case, is not limiting supply chain participation. It's getting everyone to contribute."

Editor's Note: In November 2019, Bumble Bee Foods filed for bankruptcy protection in the wake of mounting debt related to a 2017 federal price-fixing case and agreed to sell its assets to Taiwan's FCF Fishery Co. for roughly \$925 million. As of press time, the company was operating as usual and the SAP project was in full effect.



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[IN PRACTICE]



How Zulily Optimizes its Supply Chain on Cost, Not Speed

CUSTOMER & PROVIDER

Zulily, a wholly owned subsidiary of Qurate Retail (Qurate Retail Group), works with more than 15,000 vendors to launch 100 curated, timelimited sales events daily featuring thousands of products.

The Seattle company, with \$1.8 billion in annual revenue in 2018, operates a low-inventory supply chain and employs a point-of-ship model instead of the more traditional point-of-order for both inbound and outbound packages.

Zulily has created and iterated on its own homegrown warehouse management software solution, and has developed its Triple Z Logistics 3PL and vendor-owned inventory program to help smaller or boutique vendors with product storage, shipping, and order fulfillment services.

by Jennifer Baljko

Zulily started in 2010 with the idea of making online shopping fun—delightful even.

Instead of the transactional activities that many e-tailers engage in—you need a coffee pot and buy the one you like at your favorite website—the company initially targeted moms with curated fashion, home decor, and kids' products at the best competitive price. Over the years, Zulily, a wholly owned subsidiary of Qurate Retail, which also owns QVC, QxH, and Cornerstone, expanded its offering and now serves 5.9 million customers.

That's not, however, what makes it unique in the e-commerce space. What makes Zulily stand out is its time-limited sales events approach, point-of-ship operations model, in-house third-party logistics (3PL) service, and homegrown IT and warehouse management solutions to run its three U.S. fulfillment centers.

CREATING THE WOW

"For us, it's about creating that excitement, that wow," says Richard Tilley, Qurate's vice president of operations and change management who sits at Zulily's headquarters in Seattle. "We're all about discovery-based shopping. We help customers discover new things, maybe things they didn't know they wanted until they saw it.

"We delight in surprising customers with products they don't see elsewhere at unbelievable prices. That's what makes us unique from a business perspective," he adds. "As a result, our supply chain is a little different, too."

HERE TODAY, GONE IN HOURS

During its January 2010 launch, Zulily worked with three brands to offer three events for a limited time. It made \$1,800. Flash forward to 2020, and those numbers have improved.

Today, at any given time, the company runs approximately 100 sales events featuring women's and men's apparel, home goods, beauty and wellness products, and other consumable items from more than 15,000 vendors. Each event runs an average of 72 hours, and then the sale is over and new products are listed. Some events may sell a single item from an international brand, boutique, or specialty provider, while other events may bundle different items together.

Zulily currently has 5.9 million customers, and revenue for the quarter ended on Sept. 30, 2019, was \$359 million, according to Qurate's third-quarter financial earnings released in November 2019. Zulily's annual 2018 revenue, the most recent figure available, totaled \$1.8 billion.

This dynamic way of selling products

at lower prices than other retailers and online shops, though, means finding ways to reduce costs through efficient supply chain operations.

To that end, Zulily developed a set of supply chain and order fulfillment processes not commonly seen in e-commerce circles. Surprisingly, these practices go very much against the grain of the next-day and two-day delivery trends consuming the online retail world.

CASEBOOK STUDY

The Ins and Outs

CHALLENGE

Managing inbound shipments from more than 15,000 vendors and outbound shipments to about 5.9 million customers

SOLUTION

A low-inventory supply chain operation running on Zulily's homegrown WMS, point-of-ship processes, and customer order consolidation processes

RESULTS

- Passes along operational and supply chain cost savings to customers, resulting in merchandising prices of up to 70% off
- Manages 2.2 million square feet of warehouse space, spread across three fulfillment centers in Columbus, Ohio; Reno, Nevada; and Bethlehem, Pennsylvania.
- Has capacity to ship items received in the same day, allowing Zulily to maintain a minimal amount of vendorowned inventory

NEXT STEPS

Continuing to evaluate how the company can increase efficiencies associated with getting the right inventory to the right place, in the right quantities "In terms of these products, and as we expanded, we're able to deliver because we have a unique supply chain that's different than Amazon or the other Internet giants, one that's optimized on costs rather than speed," Zulily President Jeff Yurcisin told Bloomberg TV in November 2019. "From our point of view, it's not about next-day shipping. It's about passing the savings to customers."

CORE PRINCIPLES

In order to offer prices that represent up to a 70% discount on merchandise and pass those savings along to customers, Zulily's supply chain, logistics, and operations strategies run on a few core principles: The company holds a minimum amount of inventory, orders to vendors are placed in bulk after the sale event ends, and inbound and outbound shipping is based on a pointof-ship practice instead of the more traditional point-of-order one.

This translates to something that looks like this on the front end: A customer clicks through Zulily's website and finds an item she likes. She buys it, and pays for shipping. This order triggers a window of time to order additional items without extra shipping charges. Zulily consolidates subsequent purchases into a single shipment, and then provides the lowest-priced shipping option for all items ordered by 11:59 p.m. West Coast time that same day (Sunday to Thursday; weekends have an extended order-by time). The order consolidation is key. "Part of our magic is our consolidation process," Tilley says. "Customers are charged shipping for the first order they place, but if they place any subsequent order in that consolidation period, they get free shipping. In the background we consolidate those orders in a way that becomes what we will fulfill against.

"Every company has shipping costs, but we minimize the impact to customers by allowing them to place multiple orders in the same consolidation period," Tilley adds.

The trade off is that customers are willing to wait for their orders, sometimes as long as a week or two, depending on where the vendors' products are located and how quickly they can fulfill Zulily's bulk orders. The theory is that customers are shopping for the experience and the savings, and not all products require next-day delivery, nor do all customers want or need fast delivery service or the extra cost associated with it.

KEEPING THINGS MOVING

On the back end, once the customer places an order, Zulily's order fulfillment activity begins. The process revolves around making shipping decisions at the point of ship, after the order is placed.

When the online sales events finish, Zulily sends its vendors a bulk purchase order for the products sold during the event. Zulily sends a truck to the vendor's warehouse to pick up



After an online sales event, Zulily sends vendors a bulk purchase order for the products sold, sends a truck to the vendor's warehouse to pick up the products, and routes them to one of three fulfillment centers in Columbus, Ohio; Reno, Nevada; or Bethlehem, Pennsylvania.

the products, and routes them to one of Zulily's three fulfillment centers in Columbus, Ohio; Reno, Nevada; and Bethlehem, Pennsylvania—a process that could take eight to 10 days, according to Zulily's website.

Once the product reaches the warehouse, the order items are consolidated into a single package and staged for customer shipping. Zulily has the capacity to ship the same items it receives on the same day, eliminating the need to hold and store inventory—a key part of the company's business and supply chain strategy.

This process increases Zulily's flexibility in choosing inbound and outbound delivery methods since it uses both consolidated and dropship methods.

"We don't actually purchase the inventory from the vendor until the customer places an order with us," Tilley explains. "That is very different from a traditional inventory model. But, we also work closely with our vendors to manage the flow of inventory from the point of the purchase order until the time it hits our fulfillment centers."

VENDOR PORTAL KEEPS THINGS MOVING

One thing helping to keep this inbound and outbound flow moving is the Zulily-built vendor portal. Through this portal, Zulily works with its 15,000 vendors to choose SKUs for the branded sales events, and provides them with visibility into event and order data, as well as related analytics to optimize product mix.

"Vendors aren't going into the sales event blind," Tilley says. "They have had discussions with the merchandising team to set expectations of how many units they may be able to sell."

Newer brands or boutique vendors still developing their logistics footprints can contract with Zulily's in-house Triple Z Logistics 3PL services. Under this umbrella, Zulily acts as the 3PL provider, storing, shipping, and fulfilling vendor-owned product.

While this infrastructure allows vendors to grow, it also gives Zulily an



Zulily's business model revolves around a point-of-ship process that runs on a homegrown WMS solution and consolidates customers' orders into a single package.

opportunity to feature unique items that its customers may not have known about otherwise. Another advantage is Zulilly has immediate access to the vendor's inventory, which means the company can ship products more quickly to customers.

But the secret ingredient to Zulily's supply chain efficiency rests in the homegrown software platforms used in all its fulfillment centers, including a warehouse management software solution that controls receiving, stowing, picking, and packing. Instead of opting for out-of-the-box IT or a Softwareas-a-Service solution, Zulily adopted the philosophy of innovating rather than integrating.

And innovate it did: In 2017 alone Zulily recorded more than 2,000 deployments of the software, thanks to the side-by-side conversations between warehouse associates, engineers, and data scientists to improve the software.

"Because our supply chain is unique, the software has to function well in a high-velocity environment," Tilley says. "Having our own software allows us to innovate and iterate rapidly. As we see opportunities to improve the customer experience or operating efficiency, we can build and deploy quickly.

"This process gives us great flexibility," he adds. "We don't have to design the building around the software. We designed the software around the building."

A fundamental element of the software is the strength of its

prioritization logic and decision-making capabilities around which orders get fulfilled first and the order they move out of the fulfillment center.

Another reason the company built its own software brings us back to the beginning of this story: To delight the customer with a fun shopping experience and pass along the savings in the way of lower product prices.

"My team develops and executes the fulfillment strategies that allow us to optimize the customer experience and also to increase our operational efficiency," Tilley says. "My team is looking at the entire network, and asking, 'How can we serve our customers better? How can we become more efficient inside the four walls and upstream of the fulfillment centers?"

MAINTAINING MOMENTUM

Looking across the entire network will keep Tilley's team busy in 2020 as well, namely in the area of streamlining where inventory is held and improving the speed of fulfillment.

Zulily will continue to evaluate how to increase efficiencies involved in getting the right inventory to the right place in the right quantities by leveraging the company's technology and software.

"Moving forward, we want to place inventory closer to the customer and get even more focused on determining where to place our inventory so that we can improve the speed of fulfillment," Tilley adds.

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GUEST: Steve Keighley, Software Solutions Consultant, E2open

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ROGER PENSKE RECEIVES PRESIDENTIAL MEDAL OF FREEDOM

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Roger Penske recently received the Presidential Medal of Freedom, the highest civilian honor, from President Donald Trump. Penske built his one-car dealership into Penske Corporation, a leader in global transportation services, where he serves as chairman. Team Penske, Penske's motorsports team across various series, has won more than 530 races and 35 championships in its 53-year history. In NASCAR, Penske teams have won 120 Monster Energy NASCAR Cup Series races. Join us at the White House to see Penske receive his award.



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Parcel Cargo Chains Coming of Age

Pierbridge

Consumers are shopping from merchants around the globe on their smartphones and other devices at the click of a button. Cargo chains are emerging to facilitate and accelerate cross-border last-mile parcel deliveries. The challenge for retailers and supply chain partners is making those deliveries seamless to end consumers. This free e-book shines a light on building a solid cargo chain.



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Descartes

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How Digitizing Your Supply Chain Can Transform Your Business

GUEST: Vishal Bedi, Chief Information Officer, DHL Global Forwarding

In today's highly competitive industry, digitizing your supply chain is a necessary step to stay ahead of an innovative and disruptive logistics landscape. From improving efficiency to more comprehensive visibility, new technologies are helping make the digital transformation not just easy, but inevitable. Tune in as Vishal Bedi of DHL Global Forwarding offers his take on the current and future impact of digital transformation.



[IN FOCUS]

SPOTLIGHT Technology Innovations

These innovations connect supply chain stakeholders to enable instant booking, seamless collaboration, and increased visibility.

>BOOKING

> J.B. Hunt Transport

Services integrated JDA Software's supply chain management platform with J.B. Hunt 360°, the company's digital freightmatching platform. This enhancement provides customers with greater pricing visibility and access to available capacity. Combining both platforms' application programming interfaces also allows customers using JDA Transportation Management to access dynamic quotes, detailed pricing, and realtime rate updates.

> SAS Cargo Group A/S,

the cargo and logistics branch of Scandinavian Airlines, launched digital e-booking, live rates, and capacity availability on WebCargo, a platform that automates rate management and back-office operations. The platform enables direct application programming interface connectivity so the entire e-booking process occurs online. When a freight forwarder selects a rate, the e-booking is transmitted to the airline instantly without SAS Cargo having to confirm the booking manually.

> Airline Lufthansa Cargo expanded its digital sales channels with dynamic spot prices that can be booked immediately. The prices now automatically generate in real time via Lufthansa's rapid rate response mechanism and are displayed as directly bookable offers. The company uses rapid rate response on all its booking channels and plans to gradually deploy the system worldwide by the end of 2020.



> Etihad Cargo, the cargo and logistics arm of Etihad Airways, implemented cargo.one, an e-booking platform. Freight forwarders can now search, compare, and book cargo space on Etihad's aircrafts in real time and receive immediate booking confirmation. This will help expand the number of origins and destinations that forwarders using the platform can access because of the number of connections the airline offers from Abu Dhabi.

> Small businesses can make informed decisions when choosing the best multimodal shipping option with C.H. Robinson's Freightquote self-service technology. The web-based, mobile-responsive platform is designed to streamline the shipping process and allow small businesses to book freight without needing any shipping knowledge or expertise. Customers can enter a few details and compare competitive rates from high-quality carriers.

> High-volume shippers can compare shipping rates across multiple carriers. accounts, and services with ShipWorks' enhanced Best Rate tool. The tool's new features allow users to add multiple accounts for each carrier and search them all to see which offers the best rate and time in transit. Users can also uncheck specific services within each carrier to narrow down their results and view only the most relevant services.

> Schneider, a trucking, intermodal, and logistics services provider, launched a tool that enables thirdparty carriers to instantly book loads. This automation delivers a more efficient experience for third-party carriers by providing realtime rates and reducing time spent finding and securing the right load. Negotiationfree rates further streamline the process by eliminating time-consuming back-andforth offers between the carrier and broker.

SPOTLIGHT

>COLLABORATION

> Ascent Global Logistics

upgraded Peak, its technology suite, to increase convenience and supply chain visibility for its truckload agent partners. Peak now gives agents complete control over shipments, allows users to search for carrier capacity, and notifies users when a load has passed the pickup window. This upgrade allows Ascent's agent network to handle multiple business functions in one web-based solution within an easy-to-use interface.

> Command Alkon, a

supplier collaboration

platform for construction

work, now offers TrackIt 3P, a single telematics platform that extends TrackIt's workflow management to third-party drivers. The platform manages and tracks third-party trucks and utilizes streamlined digital processes for ticketing, invoicing, and hauler payments. Dispatchers can now manage all company-owned and third-party trucks working for them in the same manner.

> Elemica added new capabilities to its digital supply network and software solutions that help minimize risks and manufacturing disruptions related to the quality of goods during the



> Retailers can connect, view, and act on disparate data across the supply chain to create a competitive last-mile advantage with ConveyPLUS, Convey's new delivery experience management platform. The program comprises a network of partners that develop joint solutions to extend the impact of delivery experience management across all lastmile delivery initiatives. ConveyPLUS combines real-time visibility, post-purchase experiences, and advanced analytics to help refine last-mile delivery.



pre-shipment process. Users can now attach documents relative to a networked outbound purchase order, and invoices can be autogenerated after a shipment occurs from the supplier. Elemica added real-time integration and streaming from Internet-of-Things devices to improve tracking and tracing.

>VISIBILITY

> Maersk revamped its remote container management platform, which features virtual assistant Captain Peter and provides transparency on the refrigerated containers in Maersk and Hamburg Süd's combined fleet. Captain Peter monitors the container's temperature, humidity, and carbon dioxide levels, and notifies the shipper if something needs attention. Improving on customer experience, Maersk made its data cloud-based to increase agility and customize the information to each customer's specific needs.

> Customers can now monitor their reefer container shipments in one online application with Hamburg Süd's new remote container management technology. The technology monitors the temperature, relative humidity, and concentrations of oxygen and carbon dioxide within each container in real time using an online application accessible via desktop, tablet, or smartphone. If the parameters exceed critical limits, Hamburg Süd's operations team receives an alert so they can take measures to safeguard the cargo.

IN FOCUS]

New Services and Solutions



> Averitt Express opened a distribution and fulfillment center in Atlanta, Georgia. Located near downtown and Hartsfield-Jackson Atlanta International Airport, the facility encompasses nearly 140,000 square feet of enclosed space to receive, manage, and distribute freight and inventory.

>TECHNOLOGY

> Businesses can enhance their customer support capabilities with Sara, **lptor** Supply Chain Systems' new artificial intelligence chatbot. Sara provides detailed, big data-driven, real-time insight into lptor's enterprise resource planning platforms. The chatbot utilizes IBM Watson Assistant and Google Assistant technologies to deliver a voice- and chatenabled interface, allowing it to run on cloud-based or on-premise software.

> GreyOrange, a software and mobile robotics provider, offers a new fulfillment operating system that integrates GreyMatter software with mobile robots. This system optimizes fulfillment for companies with omnichannel and e-commerce needs, increasing store efficiency by packing replenishment orders according to individual store preferences. The robots use machine learning to adjust their decisions based on real-time observations, communicating with each other and GreyMatter to continuously recalculate order fulfillment priorities.

> 3PL Central, a cloud-based warehouse management system provider, launched a partnership and developer program that expands on its central platform. The new program provides additional benefits, including access to documentation, collateral, exclusive-use application programming interfaces, and dedicated technical support. The platform delivers integrations to electronic data interchange, e-commerce, shipping, technology, and hardware solutions.

> Businesses can leverage more data and actionable insights to make informed decisions about their



supply chain management with version 20.0 of **BluJay Solutions'** transportation and distribution software. The latest updates provide greater visibility across supply chain networks and enhance BluJay's customs and compliance management suite by covering more countries and procedures.

> Shippers can get rates instantaneously from ocean carriers with the launch of eSUDS Connector, a universal rate structure and API from CargoSphere, a neutral rate network for container shipping. The newly created application programming interface enables any ocean carrier to stream rate and surcharge data to its global customers on CargoSphere.

> Saddle Creek Logistics Services launched a parcel analytics tool to increase supply chain efficiencies and savings for high-volume parcel shippers. The new tool provides users with a database of all their carrier invoice data. Cloud-based software facilitates freight bill auditing, streamlines invoicing for parcel shipments, and provides dashboards for client billing and reporting through a web portal. > Warehouse systems integrator **Inther Group** introduced the Gantry Robotic Intelligent Piece Picker, an automated picking technology that processes up to 1,200 items per hour. The software ensures the robot approaches the product from the right direction to get the best



possible grip. It calculates each product's weight, length, and width and determines how quickly it can move and place items in the correct bin.



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> DHL Express added a daily direct flight and increased hiring at its Toronto gateway. The company invested \$100 million to expand and upgrade what will be Canada's largest DHL facility.

> Tompkins Robotics, a

provider of autonomous mobile robots, partnered with Bastian Solutions to expand its t-Sort platform and product line to help improve warehouse efficiency and capacity. **Bastian Solutions will** utilize t-Sort systems to help shippers optimize warehousing and fulfillment operations. Applicable to any size distribution operation, t-Sort is a robotic sorting system that operates without a fixed track.

>SERVICES

> The Port of Quincy began the first phase of an infrastructure project to expand its intermodal terminal in Quincy, Washington. It added more gravel surface to the east and north portions of the terminal to accommodate the growth in ocean container freight going > Cold chain packaging solutions provider **CSafe** opened a service center at the Shanghai Pudong International Airport, serving a higher volume of inbound and outbound traffic of temperature-controlled containers.

> ProTrans' Detroit facility moved to a new high-velocity facility in Romulus, Michigan. The new 150,000-squarefoot, access-controlled facility has 79 dock doors, one ramp, and parking for 91 trailer positions.

> Dupré Logistics Strategic Capacity Solutions moved its Fayetteville, Arkansas, facility to a new 3,000-squarefoot building in Fayetteville to support e-commerce shippers.



> The Jungheinrich ETV216i, a reach truck with an integrated lithium-ion battery, made its debut in the North American market. Offered by Mitsubishi Caterpillar Forklift America, the lithium-ion battery provides a longer service life, maintenance-free operation, and 24/7 truck availability with opportunity charging.





> 3PL Redwood Logistics

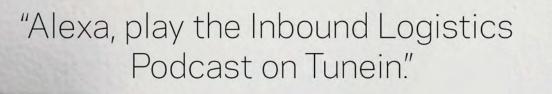
launched Redwood Platform Services, a consulting practice focused on transportation management systems and related technology integration, and pre-released RedwoodConnect 2.0, a supply chain integration platform. These services provide connectivity tools to integrate disparate supply chain and logistics applications into a single workspace.

> Rhenus Logistics

developed in-house solutions to support and optimize customers' warehouse

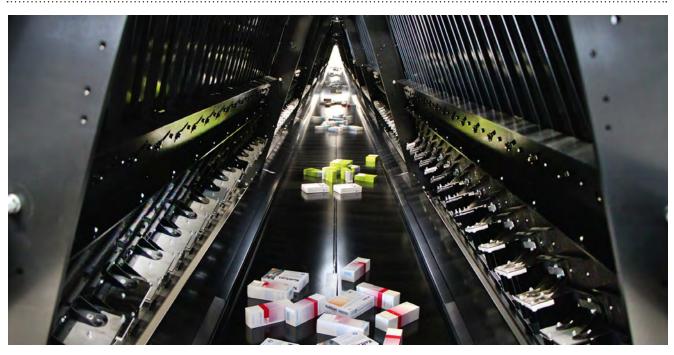


> South Korea's **SM Line** started serving the Port of Portland in January 2020, resuming a weekly container service at the port for the first time in nearly four years. The Port of Portland's Terminal 6 joins SM Line's rotation from China and South Korea to the Pacific Northwest, including stops in Vancouver, British Columbia, and Seattle.









> The A-Frame automated picking solution is designed for high-volume orders that consist of small, fast-moving items that have similar packaging, including pharmacy boxes, cosmetics, and small office supplies. Produced by logistics system integrator **Inther Group**, the solution has adjustable product channels.

and production processes. Its Rhenus Warehousing System, customized for the Asia-Pacific region, is designed to enhance cross-border security with centralized monitoring and control.

> Australian-based courier services company **Sendle** launched service in the United States from a headquarters in Seattle, Washington. Serving small e-commerce businesses, the company offers flat-rate, carbon-neutral shipping service across the country with no subscriptions or warehousing required.

>PRODUCTS

> ID Label introduced Arctic Xtreme, a high-performance warehouse rack label for cold storage environments. The labels feature a freezergrade adhesive formulated for cold, wet, and subzero storage environments, and maintain a permanent bond to metal warehouse racking at temperatures as low as -65 degrees F.

> Plastic recycling specialist Cabka-IPS will debut the third generation of its collapsible, large-load carrier CabCube in March 2020. Made from recycled household packaging waste, CabCube 3.0 includes models of different sizes and maximum filling weights.

> Presto Lifts introduced its new LiftStik PLS67-285, a compact lifter-transporter made of impact-resistant aluminum. Compact and with a 285-pound lifting capacity, this device is ideal for handling items in industrial, retail, laboratory, food-processing, and pharmaceutical environments.

> JLG Industries, which manufactures mobile elevating work platforms and telehandlers, added a new sheet materials handler to its line of telehandler attachments. The couplermounted attachment can lift up to 3,000 pounds with a 72-inch maximum fork spread, allowing heavy and wide materials to be delivered efficiently to the desired location.

> USL Lock unveiled the Ultra-Seal Lock, a tamper-evident trailer seal created to make load tampering apparent. The new device can help prevent mysterious claims, improper handling, and crosscontamination of goods.





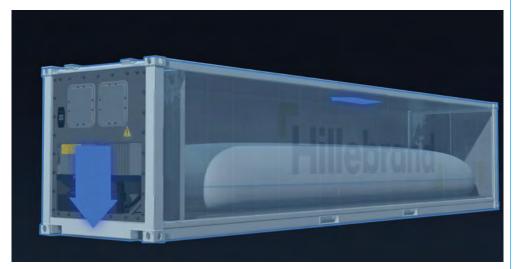
> Verti-Lift released a line of cost-effective pneumatic lifting, tilting, and rotating ergonomic equipment. These products are suitable for work cells, packaging, manufacturing, or assembly applications, and help enhance operator ergonomics, productivity, and safety.

>TRANSPORTATION

> DHL Global Forwarding rolled out DHL ASIACONNECT+ in Indonesia. The new lessthan-truckload scheduled service connects Indonesia to DHL's road freight network across Singapore, Malaysia, Thailand, Vietnam, and China, reducing costs and carbon emissions for businesses exporting to Kuala Lumpur, Penang, and Bangkok.

> Yang Ming Marine Transport launched a Singapore-

Philippines Express service and a Malaysia-Yangon Express service in response to economic growth in Myanmar and the Philippines. The new services will enable local customers in the Philippines to have greater flexibility in cargo



> Hillebrand introduced a 40-foot flexitank that enables shippers to transport nonhazardous liquids more sustainably and in temperaturecontrolled conditions. The flexitank is ideal for transporting larger quantities in a constant refrigerated or heated condition, with the benefit of increasing transport efficiency and reducing emissions. arrangement and will shorten delivery time in Myanmar.

> Global logistics and transportation company Bahri's roll-on/roll-off container vessel completed its maiden voyage at two of India's main ports: the Kamarajar Port at Ennore and the Chennai International Terminal at Chennai Port. The MV Bahri Jeddah will call regularly at Ennore and on an inducement basis at Chennai, offering direct call from South India to the East Coast of the United States.

> Logistics provider cargo-partner expanded its combined land-air transport solutions, introducing a new service from China to Europe and the United States via Hanoi, Vietnam. This provides a convenient alternative to direct flights out of China and total transit times of eight to 10 days, including road transport from China to Hanoi, air transport from Hanoi to Europe or the United States, and delivery to the final destination.

> Virgin Atlantic added a second daily service between Heathrow and Delhi and will operate three daily flights to India. It also will increase San Francisco services to twice daily for summer 2020. Johannesburg, Los Angeles, San Francisco, and Lagos will debut the carrier's new Airbus A350 aircraft, increasing the space available for shippers on these cargo routes.

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NOVEMBER 2019 Sometimes there's no avoiding turbocharged transportation. Whether a patient is waiting for an organ or a lack of materials is delaying construction, it's possible to move freight of any size at any speed that customers require.

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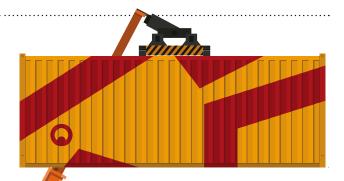


2019 TRUCKING Perspectives

SEPTEMBER 2019

Tight trucking capacity was no longer a major concern for shippers and carriers, but insurance and driver-related costs posed the biggest obstacles, according to our 2019 Trucking Survey.

bit.ly/trucking2019

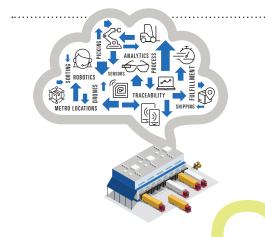


GREEN SUPPLY CHAINS: SUSTAINABILITY SELLS

JUNE 2019

Three companies reveal how they nurture environmentally friendly practices in their supply chains and why it's a beneficial way to do business.

bit.ly/green-supply-chains



TODAY'S DISTRIBUTION CENTER<mark>:</mark> You say you want an evolut<mark>io</mark>n?

MARCH 2019

Distribution centers are moving closer to urban areas, leveraging technology, and adding amenities to attract skilled workers to accommodate increasingly faster delivery times.

bit.ly/todays-distribution

19 INTERMODAL TIPS FOR SUCCESS

OCTOBER 2019

Experts share how shippers can get the most out of intermodal transportation by choosing the right loads and examining all their options.

bit.ly/intermodal-tips

3PL POWER

JULY 2019

A strong connection with third-party logistics providers can help shippers respond nimbly to the ups and downs of their daily supply chain operations.

bit.ly/3pl-power





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Connect with industry peers, join insightful discussions, and discover the future of supply chain at these can't-miss events in 2020.

FEB 23-26, 2020 DALLAS, TX LINK2020: RILA's Retail Supply Chain Conference linkretailsupplychain.rila.org

Supply chain executives from top retailers network and learn at this four-day conference, hosted by the Retail Industry Leaders Association. Breakouts, general sessions, and roundtable discussions help attendees at any stage of their career explore timely topics, including technology integration, ethics, omnichannel automation, and sustainability.

MAR 9-12, 2020 ATLANTA, GA **MODEX 2020**

modexshow.com

From educational seminars to exhibits of next-generation technology and equipment in action, MODEX 2020, powered by MHI, helps professionals transform their supply chain. Attendees can make new

contacts from across the globe and learn how key industry trends and innovations can transform manufacturing and supply chain operations during free educational sessions and four keynotes.

MAR 12-13, 2020 SAN DIEGO, CA LogiMed US 2020

logimedusa.wbresearch.com Both the manufacturing and provider sides of the medical device supply chain can take advantage of LogiMed US 2020's immersive learning forum to solve their end-toend healthcare supply chain challenges and achieve deeper collaboration. Hosted by Worldwide Business Research, this interactive conference helps identify best practices for supply chain improvement, customer service, and cost minimization in today's healthcare environment.



MAR 15-17, 2020 SAN DIEGO, CA 2020 IWLA **Convention & Expo**

.....

iwla.com/convention Warehouse logistics leaders will explore the latest innovations in warehousing at the 2020 International Warehouse Logistics Association Convention & Expo. This year's panel discussions and breakout sessions cover topics such as food recalls, government regulations, artificial intelligence and robotics, and the state of real estate.



APR 1-2, 2020 ATLANTA, GA **Industrial Pack 2020** industrialpackexpo.com

Industrial packaging companies from around the world showcase a diverse range of products, from barrels to pallets and shrink wrapping, at this twoday event hosted by Easyfairs UK & Global. Attendees meet key industry figures and explore packaging trends such as sustainability, reusability, legislation, safety, new materials, smart solutions, and security.

APR 26-29, 2020 BOSTON, MA **ISM 2020**

ism2020.org

Supply chain and procurement professionals can attend more than 70 breakout sessions across seven tracks, take in morning keynote sessions, and meet with supplier organizations at the Institute for Supply Management's annual conference. This event infuses interaction in each session as well as idea generation in its new "hackathon" problem-solving workshops.

APR 27-29, 2020 ORLANDO, FL **46th Annual Education**

for Transportation **Professionals Conference** tlcouncil.org

The Transportation & Logistics Council's 46th Annual Education for Transportation Professionals Conference is dedicated to transportation industry professionals such as shippers, vendors, third-party logistics providers, brokers, carriers, and more. In addition to the conference itself, three optional full-day seminars are available for attendees: contracting for transportation and logistics services; freight claims in plain English; and transportation, logistics, and the law, which are all presented by transportation attorneys.





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Get Info & Register at TMSAtoday.org JUNE 7-10, 2020 Sheraton Music City Hotel Nashville, TN





APR 27-29, 2020 DALLAS, TX ECA MarketPlace

expresscarriers.org/marketplace Shippers and carriers can network and form logistical support partnerships at the Express Carriers Association MarketPlace event. The pre-arranged, one-onone interviews will help shippers find carriers that provide viable supply chain alternatives. The exhibition hall features new technologies and other transportation services to explore.

MAY 3-6, 2020 PROVIDENCE, RI WERC 2020: 43rd Annual Conference for Logistics Professionals

wercconference.org

The Warehousing Education and Research Council's 2020 conference uses a new, collaborative approach to professional education and networking that will help logistics professionals stay on top of warehousing industry developments and build meaningful business relationships. Instead of the traditional trade-show booths and showroom, the conference will feature a short, interactive solutions session in which attendees can ask guestions in a casual group setting.

MAY 5-6, 2020 DALLAS, TX American Supply Chain Summit 2020

supplychainus.com

The American Supply Chain Summit, hosted by Generis, focuses on exploring ideas about the impact of market dynamics and new technologies on supply chains and operations. Attendees examine key cases on workforce management, advanced analytics, process improvement, and automation in facilities



around the world. This year's key themes include profitability and risk management, technology, cost optimization, and workforce management.

MAY 11-14, 2020 ORLANDO, FL Gartner Supply Chain Executive Conference 2020

bit.ly/gartner-supply-chain Chief supply chain officers and their leadership teams will gain insight on the trends disrupting their business at the Gartner Supply Chain Executive Conference. The event will help attendees adapt to current market conditions and refine their supply chain, measure successes and failures, and create a company culture that encourages innovation.

MAY 12-14, 2020 KANSAS CITY, MO NARS 2020 Annual Meeting

railshippers.com/events Offering an infrastructure update and discussing the economic outlook, the North American Rail Shippers Association's annual meeting aims to prepare rail shippers for supply chain success. This year's program features exhibits for the first time, and kicks off with keynote speaker Jim Foote, AAR chairman and CSX president and CEO.

JUN 3-4, 2020 Philadelphia, pa Home Delivery World 2020

bit.lv/home-delivery-world This annual retail logistics conference and exhibition, hosted by Terrapinn, covers parcel, heavy goods, grocery, and more, with more than 5,000 attendees participating in 260-plus expert speaker sessions. Subjects range from autonomous vehicles, C-stores, and heavy goods to cannabis, fleet technologies, and real estate. Attendees can explore last-mile innovations from Home Delivery World's exhibitors and partners.

SEPT 13-15, 2020 LONG BEACH, CA Intermodal Expo 2020

intermodalexpo.com

Intermodal industry professionals including carriers, 3PLs, marine terminals, and manufacturers can focus on key issues facing the intermodal supply chain at the Intermodal Association of North America's Intermodal Expo 2020. Both experienced and early-career professionals speak with exhibitors and industry experts to see the products and trends affecting the future of the industry.



SEPT 13-15, 2020 NEW ORLEANS, LA ASCM 2020

apics.org/amual-conference/home Supply chain professionals from around the world come together for the Association for Supply Chain Management's annual event, which builds on the American Production and Inventory Control Society certification and training. Attendees will learn about the accelerated pace of change in supply chain across topics ranging from inventory and materials management to robotics and virtual reality.



SEPT 20-23, 2020 ORLANDO, FL CSCMP EDGE 2020: Supply Chain Conference & Exhibition

cscmpconference.org With more than 120 sessions and several unique tracks, the Council of Supply Chain Management Professionals' conference covers the newest technologies, best practices, current trends, and biggest challenges in supply chain management. Attendees can interact face to face with leaders developing supply chain content, technology, and innovation across blockchain, artificial intelligence, 5G, transportation, logistics, and more to gain cross-discipline supply chain knowledge.



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GET THE MOST OUT OF YOUR LOGISTICS PLANNER

The Planner edition provides you two types of information: CREATIVE and DIRECTIVE.



The creative portion contains more than 200 pages of need-to-use content, including tons of tips for amping all aspects of supply chain operations. For practical how-to advice, this edition includes articles to help you generate even more demand-driven excellence. All the content is designed to provide new and innovative ways for you to speed product flow efficiently, reduce inventory and investments in supporting infrastructure, and better match your inbound flow to demand from your customers.





part of this Planner edition comes in-directing you to logistics leaders. The companies profiled are leaders in their quadrant, primarily because they understand the importance and difficulty of practicing demand-driven logistics. More importantly, they have made all the investments in solutions and messaging to provide the information you need to succeed.



ON DEMAND, ANY WAY AND ANYWHERE YOU WANT IT



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3PL Central

3PL Central is the leader in cloud-based warehouse management system (WMS) solutions built to meet the unique needs of the 3PL warehousing community. Serving as the backbone of our customer's operations, our platform quickly transforms paper-based, error-prone businesses into service leaders who can focus on customer satisfaction, operate more efficiently, and grow faster.

Offering a comprehensive warehouse management platform, we make it easy for 3PLs to manage inventory, automate routine tasks, and deliver complete visibility to their customers. As the proven industry leader for well over a decade, 3PL Central accurately manages billions of dollars in inventory and processes more than one million orders a week from any of our customers and their customers' systems.



3PLCentral

3PL Central is one of the most experienced and connected organizations in the 3PL and warehousing industry. Our platform, 3PL Warehouse Manager, is positioned at the center of a powerful ecosystem of customers, partners, and developers with the goal of enabling intelligent distribution and driving growth. Our platform is used daily by over 10,000 logistics professionals.

Whether you're a 3PL owner looking to grow your business, or an operations manager looking to improve day-to-day workflows with best practices, our platform will help you:

- Increase warehouse efficiency via task automation, pre-wired integrations, and cloud-based inventory management.
- Embed billing processes into your operations by customer, ensuring you are fully paid for all the work you perform.
- Transform into a paperless warehouse by eliminating manual input and streamlining workflows and operational processes.
- Provide complete visibility to your teams and customers with accurate, real-time information 24/7.
- Better serve warehouse customers so you can become a 3PL they will love.

Contact us today for a demo and learn how you can partner with 3PL Central. Visit: https://info.3plcentral.com/my-demo



3PL Central 222 N. Pacific Coast Hwy. Suite 1500 El Segundo, CA 90245 888-375-2368 info@3plcentral.com www.3plcentral.com





A.N. Deringer, Inc.



Jake Holzscheiter President and CEO

Services:

- Customs Brokerage
- Freight Forwarding & Logistics Solutions
- Customs & Trade Consulting
- Warehousing & Distribution
- USDA Meat Inspection

Over 30 offices located from Maine to Blaine, WA, and key air and vessel ports throughout the US.





A.N. Deringer, Inc. 64 North Main St. St. Albans, VT 05478 Tel: 888-612-6239 www.anderinger.com





Deringer provides Customs brokerage, freight forwarding, Customs and trade consulting, warehousing and distribution, and meat inspection services. Maintaining local representation at major ports, strategically located along the northern border and at major air and vessel ports nationwide, customers are provided with a single point of contact. A flat organizational structure allows easy access to our President and leadership team. Moreover, Deringer's culture includes a strong commitment to the ongoing success of our business partners. Welcome to the Deringer Difference.

Deringer's Customs Brokerage Services

We have 100 years of experience, and our longevity in the industry means customers benefit from the expertise, service, and innovation that comprise the Deringer brand. When choosing a Customs broker, consider that we are renowned as a forerunner of many new and developing trade programs. Members of Deringer's leadership serve on various US Customs & Border Protection and trade association boards and committees. Customers benefit directly from these partnerships as they are kept current on the most pressing trade regulations. Additionally, we custom fit our solutions to each unique client. That's why Deringer has a 99% retention rate among our Top 500 customers, with less than 1% leaving due to customer service-related issues.

Deringer's Freight Forwarding Services

Facilitating the movement of goods throughout the world since 1919, Deringer is an IATA-licensed cargo agent, an FMClicensed ocean transportation intermediary, and an NVOCC. Deringer arranges and manages freight forwarding, consolidation, deconsolidation, and distribution of freight throughout its journey. Offering LCL and FCL transportation, we scale services to fit clients' needs. Partnering with Deringer for Customs brokerage and freight forwarding means a seamless delivery and reduced risk of demurrage, detention, and document transfer fees.

Deringer's Consulting Group

Deringer Trade Advisory Group (TAG) supports clients by providing a full complement of import and trade consulting services. We partner with our clients to develop effective and sustainable import compliance programs. These programs reduce the risk of regulatory penalties and seizures, optimize the management of duties and fees, and improve process efficiencies and predictability. We assist clients with CTPAT certification, provide customized training and guidance on classification, valuation, and country of origin determination, as well as prepare binding rulings and prior disclosures on their behalf. Additionally, our group supports customers in finding cost savings by identifying special trade program eligibility and managing duty refund programs.





A3 Freight Payment

A3 Freight Payment creates managed, customized freight payment solutions for large volume shippers. Our solutions automate transportation payables, ensure accurate billing, integrate advanced payment options, and provide detailed reporting for the supply chain and finance professionals within your company.

Headquartered in Memphis, A3 Freight Payment is led by an experienced group of industry veterans who have designed, implemented, and managed global freight payment solutions for some of the largest shippers in the world.

Our solutions incorporate the best practices gathered from industry experts who have worked with multiple freight payment providers and hundreds of Fortune 1000 customers. We are experts at freight payment...it's our sole focus and core competency.



A3 Freight Payment

3150 Lenox Park Blvd. Suite 400 Memphis, TN 38115 Tel: 901-759-2966 Fax: 901-759-2940 info@a3freightpayment.com a3freightpayment.com



A3 Freight Payment tailors all aspects of a custom freight payment solution to build a unique solution specific to your needs including:

Invoice Automation

- Invoice Automatio
 Invoice Validation
- Invoice valida
 Data Capture
- Rate & Service Audit (pre and post)
- Cost Accounting
- Exception
- Management
- AP Automation
- Business Intelligence
- Systems Integration

Companies choose A3 Freight Payment because of our:

Business Strategy-One of a select few, not one in a million

A3 Freight Payment partners with large volume shippers who seek a high degree of customization, exceptional customer service, reliable processing, and minimum resource involvement in managing their solution. This strategy promotes a flat org structure, controlled growth, equal prioritization of customers, and scalability of operations.

Approach to Processing – A different approach, a better result

The A3 Freight Payment solution incorporates the best practices gathered from industry experts who have worked with multiple freight payment providers and hundreds of Fortune 1000 customers. Our unique processing model provides a managed solution that eliminates the pitfalls associated with traditional freight payment solutions and provides 100% transparency to you, to our staff, and to your logistics providers.

Customized Solution-One solution does NOT fit all

Your company has internal systems and processing constraints that are unique to your business. A3 Freight Payment partners with you to understand your unique needs and develop a custom and flexible solution that incorporates best practices while working within your constraints.



Dedicated Resources-A truly managed outsource solution

Each A3 Freight Payment client has a dedicated, experienced team of resources led by an Account Manager who is the single point of contact for you. The account manager and their team are empowered to tap into company resources to meet the needs of the client and are solely accountable for management of all processes. This "team concept" provides you with exceptional customer service and produces a truly managed solution.

Experience-Our knowledge ensures a smooth transition

The A3 Freight Payment team has a track record of designing, implementing, and managing global freight payment solutions for some of the largest shippers in the world. This experience is crucial to the successful development and deployment of a solution while ensuring a smooth transition for you.





Alaska Railroad



s the only railroad providing freight services in the state of Alaska, the Alaska Railroad is uniquely positioned to move your shipment across the Last Frontier.

Seamless service between Alaska and the Lower 48 — and beyond.

We contract a yearround, weekly barge service between Washington and Alaska, and work with railroads all across North America. The result: a combination rail-barge-rail service to transport your freight between Alaska and the contiguous U.S., Canada and Mexico — arranged all through the Alaska Railroad.

We're with you all the way.

Our dedicated freight customer service team keeps you informed — and your shipment on time and within budget.

Our rail-barge service minimizes transfers, damage and shrinkage.

Railcars from the Lower 48 are rolled on to railequipped barges in Seattle and rolled off in Whittier, Alaska, with no need to transload — meaning a safer and more efficient journey for your goods.

No railroad nearby? No problem.

We can arrange for pickup at origin and delivery at destination for non-rail served customers.

Plan ahead and reap the savings.

We won't pretend to be the fastest way to move goods. But there's no question that moving your freight by train is the most cost-effective option.



Alaska Railroad 800-321-6518

Sales & Service 907-265-2448

Freight Customer Service 907-265-2624

www.alaskarailroad.com



We haul freight for all kinds of industries:

- Project & Construction Freight
- Oil & Gas Field Supplies
 Mining Equipment &
- Commodities
- Trailers & Containers
 Dull Commodition 8
- Bulk Commodities & Hazardous Materials

Year-round ice-free ports:

- Seward
- Whittier

Laydown/storage areas:

- Seward
- Fairbanks



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Alliance Shippers Inc.

Services and Solutions:

- The Perfect Shipment® Program
- Intermodal: USA, Canada and Mexico
- Over-the-Road
 Transportation
- Critical Capacity Solutions
- International Transportation Service
- Temperature Control
- Warehousing Services
- Dedicated Fleet



ounded in 1977, Alliance Shippers Inc. has grown to become one of the largest privately owned providers of global shipping services. With a range of divisions from temperature control to intermodal rail services—Alliance Shippers Inc. can combine a number of services for each customer. By tailoring services and customizing routes and shipping methods, Alliance Shippers Inc. ensures efficient and cost-effective transportation.

While offering worldwide shipping services, Alliance Shippers Inc. is best known for its absolute dedication to customer service. From the sales level to operations—every customer receives dedicated resources and personnel. At Alliance Shippers Inc., quality assurance specialists and communications experts manage the very latest shipping and tracking technologies to ensure that customers have instantaneous access to the information they need.

All of these factors drive Alliance Shippers Inc. to provide The Perfect Shipment®. It's Alliance Shipper's company-wide commitment to the following four goals:

- Pick up the shipment on time
- Deliver the shipment at the time requested
- Deliver the shipment without exception
- Provide an accurate freight bill

Every shipment at Alliance Shippers Inc. is tracked automatically by a proprietary and state-of-the-art computer system. Multiple measures and checkpoints, from origin to destination, help guarantee on-time pickup and delivery. Whether at the origin, on the rail, on the highway or at the destination dock, Alliance Shippers Inc. keeps track—so their customers can keep on schedule.

As an early supporter and currently certified member of the EPA's SmartWay program, Alliance Shippers Inc. is committed to responsible environmental practices, which includes maximizing fuel efficiency. Alliance Shippers Inc. understands that smart business methods are not only good for the environment—but also good for their customers' bottom line.

Alliance Shippers Inc. believes it is one thing to promise high standards. It is something quite different, however, to commit to excellence by monitoring and grading yourself with serious performance metrics. At Alliance Shippers Inc., it's a standard practice. By consistently monitoring, measuring and modifying its services, Alliance Shippers Inc. is committed to constant improvement.



Alliance Shippers Inc.

Corporate Office: 516 Sylvan Avenue Englewood Cliffs, NJ 07632 201-227-0400 info@alliance.com www.alliance.com





Alpega

Shaping Transport Collaboration for a Better World

Transform your logistics operations with Alpega TMS solutions:

- Multi-tenant cloud-based solutions
- Global, modular, flexible, scalable
- Pay only for what you use via a SaaS model
- Reduce operational costs via automation of transportation workflows
- Save time and lower freight spend
- Connect supply chain partners to create your logistics ecosystem
- One collaborative platform with visibility across logistics networks
- Shared data for real-time decision making
- Plan and optimize global networks
- Smarter procurement and improved compliance
- Know your true freight costs
- Improve cashflow via faster invoice processing
- Measure KPIs
- Improve customer service levels
- Efficient and sustainable



Alpega North America Inc. 1600 Utica Ave S, Ste. 900 Minneapolis, MN 55416 877-763-3240

infoNA@alpegagroup.com na.alpegagroup.com



lpega is a global provider of end-2-end cloud-based Transportation Management Systems (TMS). Alpega enables shippers, logistics service providers and carriers to collaboratively manage all transportation activities from tactical to strategic. By digitizing transportation operations, Alpega TMS solutions transform local and global supply chains into collaborative ecosystems bringing transparency and

efficiency to all trading partners involved. Connect supply chain partners across your logistics networks via a single SaaS platform to collaboratively manage transportation sourcing, planning, optimization, execution, settlement and analysis.

Alpega's modular design and ease of integration address the varying needs of companies of all sizes and supply chain complexity. Our solutions can stand alone, integrate with existing technologies, and scale as needed. Easily adjust your logistics capabilities to align with the demands of your business.

Offered on a transactional or subscription basis, customers pay only for what they use—for a low TCO and rapid ROI.

Whether you're focused on road only transportation or optimized multi-modal and multi-leg planning and execution for global and complex networks, Alpega TMS solutions enable efficient transportation management.

Alpega Solutions

Alpega TMS - Digitize transportation processes, collaborate with trading partners, and create your logistics ecosystem. Alpega TMS addresses Gartner Levels 1-5 of TMS/ supply chain complexity.

Planning & Optimization – Integrated strategic, tactical and dynamic transportation planning and optimization.

Load Tendering - Automate transport orders, tender loads and centralize related documentation efficiently.



Live Tracking - Real-time tracking for complete shipment visibility with ETAs and notifications.

Mobile Solutions - Stay up to date through real-time shipment updates, including exceptions.

Freight Cost Management - Monitor, settle and analyze freight costs online, and gain full visibility to transportation costs.

Analytics & Reporting - Transportation data at your fingertips for actionable insights and smarter decisions.

Dock Appointment Scheduling – Schedule appointments online 24/7 for inbound and outbound pickups and deliveries across locations.

Freight Procurement - Run RFQs, analyze freight rates, and conduct spot bidding without spreadsheets.

Reusable Packaging Management - Manage returnable transport packaging asset levels & movements between network partners.

Through collaboration with trading partners, increased visibility across transportation networks, and improved asset utilization, shippers can reduce freight spend and carbon footprint — providing an efficient, sustainable logistics IT solution for today's supply chain.

Alpega's user community is present in 80 countries worldwide.





Victor Finnegan Founder & CEO

At the heart of our mission is customer satisfaction. It begins with the courtesy and helpfulness of our service reps and dispatchers. It is enhanced by our convenient online ordering and tracking system. And it ends with the speed and professionalism of our couriers. Small wonder our on-time performance average is 99.3%.

We believe in treating our customers and employees with respect and integrity. It's a reflection of the pride we take in presenting solutions that work. Failure to deliver for our customers is not acceptable. That's why we bring a "We Say Yes!" attitude to our jobs each day.

Many American Expediting employees have been with our family for years. Our success depends on their skill, dedication and initiative. And as we continue to grow, we will always put our customers first. We look forward to making you our next customer.

American Expediting Company

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American Expediting Company



ogistics is not always about cargo ships from foreign lands. It is not always about fleets of dedicated 48s moving freight. Local delivery services all around the country are playing an important role.

American Expediting Company has designed a solution that meets the local, need it now, need it at an exact time, need it to a specific person, need to follow specific instructions, by building out our 40 company owned facilities throughout the U.S. as well as a dedicated and professional group of partners handling time critical needs throughout the U.S.

We are experts in the first mile, last mile, and just in time inventory aspects of logistics management. For over 30 years, American Expediting has been dedicated to handling the time critical local ground delivery needs of logistics providers and shippers.

Our Services Include:

■ Same Day On Demand: We listen carefully to understand your exact requirements, then provide the fastest, most economical door-to-door route to make your deadline. Plus, you can monitor the progress of your deliveries every step of the way using our online Shipping Wizard.

Same Day Rush: Packages are picked up within 30 minutes and delivered within 1-2 hours, based on mileage.

Warehouse/Inventory Management: American Expediting's emergency parts warehouse is the quintessential Just In Time Inventory solution. Our forward stocking locations handle anything from computer repair parts and industrial supplies to medical necessities and more. American Expediting will receive your product, manage your inventory, deliver or ship to your consignee — all on an immediate, same-day, expedited basis.

Fulfillment: American Expediting's emergency fulfillment services can become an extension of your company, without the overhead of salary and space, and only when you need them.

■ Medical/Laboratory Specialists: Our medical couriers are highly skilled, bonded and insured, and equipped as necessary with scanners, dry ice, coolers, and spill kits. They are compliant with all state and federal regulations pertaining to safe biohazards transportation.

Services are offered 24 hours a day, 7 days a week. Our technology and flexibility allow us to provide the quality of service you and your customers demand, and our nationwide solution saves your valuable time and money.





Approved Freight Forwarders



Randy Tutor Vice President / Director of Sales

At Approved Freight Forwarders, our expert logistics team leverages advanced technology to tailor shipping solutions that will meet and exceed your specific requirements. We work diligently to ensure that your shipment arrives on time and intact, and we keep you updated every step of the way.



Intermodal Association of North America







Approved Freight Forwarders 14777 Don Julian Rd. City of Industry, CA 91746

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888-679-5099





Entrusted with the World's Freight

Since 1991, Approved has been your link to the Pacific and around the world, providing ocean freight consolidations, air freight and over-the-road transport of goods and commodities. As a Top 100 3PL Provider, we are the only freight forwarder in Hawaii with terminals on all four major islands.

We handle all types of commodities and all sizes of freight for businesses and individuals. And with more than 300,000 square feet of space, our warehouses can accommodate all of your logistics needs.

Approved is a fourth-generation, family owned-and-operated company that is part of The DeWitt Companies family, an integrated network of five sister companies that provides relocation, logistics, warehousing and freight forwarding services to businesses, households and military clients all over the world. With wholly owned assets in Hawaii, Alaska, Guam and the Mainland, our clients trust us for easy, affordable, and safe transportation of their goods.

Working Smarter for You

At Approved, one of our core values is to Work Smarter for our customers in every facet of our business, whether it's transportation, warehousing, distribution, sorting and segregating, transloading or project management. We're proud that we recently celebrated five years without a lost time accident or injury. The average transportation and warehousing company anticipates nearly four incidents per year and we are proud to be blemish-free, all while handling millions of pounds of freight each week. By posting zeroes in the lost time column, we have saved our customers time, money and worry because a safe team equates to safe freight.

Top-tier brands rely on us for our flexibility, responsiveness, dependability and our dedication to efficiency and costeffective operations to all points in the supply chain.

By Land, Air or Sea

Approved is an experienced, knowledgeable international 3PL offering:

- Transportation
- Warehousing
- Distribution
- Sorting & Segregating
- Transloading
- Project Management...
- and much more.

Let Approved Freight Forwarders tackle your tough logistics challenges so you can focus on your core business. Contact us today.





AR Traffic Consultants, Inc.



Arnold Riback President

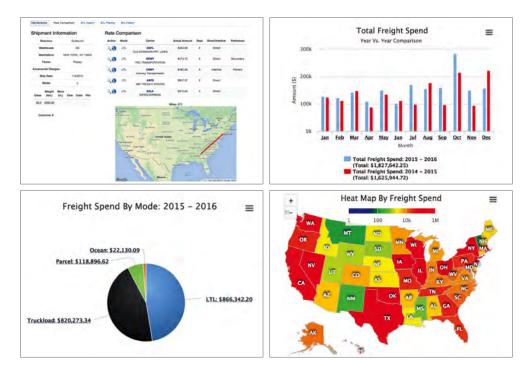
Mission Statement:

AR Traffic Consultants, Inc. has been dedicated to providing the finest in transportation logistics software and services since 1964. All of our products and services are designed specifically to improve the efficiency, accuracy, record-keeping, control and auditability of shipping. We provide the actionable information our clients need to lower their freight costs. Always providing top-level customer service, we are constantly upgrading our products and adding features to keep our clients ahead of the competition.



AR Traffic Consultants, Inc. 5 Hanover Square Suite 202 New York, NY 10004 212-736-8565 www.artraffic.com





e offer a comprehensive transportation management system available both as a cloud solution and for IBM's System I (AS/400) computers. Our modules interface with many ERPs. We are also an Infor Solution Partner. Additionally, we provide third-party freight auditing and payment services as well as support freight rate negotiation for parcel, LTL and truckload shipments. Our cuttingedge Freight Dashboard will show you the components of your freight spend and help you determine areas for hidden savings.

You will have access to a system based on our sophisticated, proprietary rating engine CalcRate®, capable of handling multiple rate bases, FAKs, weight breaks, discounts, absolute minimums, fuel surcharge tables and accessorial charges. Discount and floor exceptions can be entered for region, state, even down to the ZIP code level. Use the system for carrier selection, rate comparisons, mileage determinations and to streamline your freight auditing and payment. All of your freight history is stored for future analysis and auditing.

Use CalcRoute®, our advanced freight optimization module, to combine shipments from one or multiple warehouses into

multi-stop truckload shipments, saving up to 40% of the cost of sending shipments separately. You can also use this tool for pool distribution and parcel zone skipping.

Use the freight analyzer to determine if your warehouses are shipping by the optimal carrier and if you are shipping from your best sourcing location. See the effect that changes in the rate base, floor and discount will have on your freight spend. The warehouse relocation tool will show you the cost impact of opening a new warehouse or moving an existing one to keep up with a changing customer base.

Take advantage of using your carriers' rate bases to save over using a corporate tariff when comparing rates with the LTL Bid Analyzer. See the effect on your freight spend as if you shipped by a single carrier, used the same carrier as historically or opted for the lowest-cost carrier. When you are ready, just set the new effective date and start shipping. Send truckload carriers your lanes with the Truckload Bid Analyzer, and compare and load the rates you accept with the press of a button.

Free studies are available to determine the impact of utilizing a TMS value-added program.



Ascent Global Logistics



Bill Goodgion President

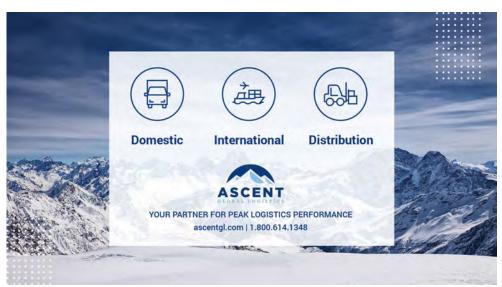
About Ascent

Ascent Global Logistics delivers elite solutions designed to help our client partners optimize logistics performance, maintain their competitive advantage and strengthen their core businesses. As a full-service global logistics partner, Ascent is focused on providing clients with innovative technology, customized solutions and highly individualized service. No matter what challenges our clients face, we are committed to helping them grow while supporting them throughout the journey to peak logistics performance.



Ascent Global Logistics 1431 Opus Place Ste. 530 Downers Grove, IL 60515 1.800.614.1348 info@ascentgl.com ascentgl.com





scent Global Logistics is focused on going above and beyond to optimize clients' logistics performance and accelerate growth. In today's dynamic marketplace, Ascent understands onesize-fits-all solutions won't step up to the challenges our clients face in a very real way, each and every day. That's why Ascent is committed to providing custom programs with highly individualized service to ensure the optimal solution, regardless of the challenge or situation.

Between the ongoing global trade war, IMO 2020 and the ability to procure truck capacity and rates in a volatile market, the challenges on the horizon in this new decade are not slowing down. Our team of deeply experienced logistics professionals has the knowledge and the dedication that will help our clients navigate these types of uncertainties. With our transparent approach to service, we keep clients informed and educated, while also providing them with tools to better plan and manage their businesses through whatever challenges may arise.

Technology Beyond Logistics

At Ascent, we believe in combining our people's knowledge with powerful technology to deliver a seamless and intuitive experience. We have made significant investments—and plan to continue those investments throughout 2020-in a series of enhancements to our client technology, PEAK[™]. This will enable us to provide clients with a multimodal technology platform that simplifies how clients, carriers and agents interact with us. This robust tool will also help our clients manage activities deeper in their supply chains. At Ascent, we realize it is no longer enough to inform clients of a shipment's location or provide past reports. The best 3PL partners are able to give clients insights into their businesses that will assist with a better understanding of what may happen in the future, and that is precisely what we deliver through PEAK[™].

Our Biggest Investment—Our People

While technology is critical, it becomes less and less valuable without skilled, experienced people behind it. That's why at Ascent, we invest in and empower our people to help our clients streamline their supply chain, strengthen their core businesses and achieve peak logistics performance. That emphasis on the peoplequotient is not just something we talk about. It is our defining difference and the way that we at Ascent will continue to distinguish our elite brand of partnership, into the new year, the new decade and beyond.



Atlanta Bonded Warehouse Corporation

Mission Statement

Our mission is to provide integrated warehousing, transportation, and co-packaging services to the food, pharmaceutical, and related CPG industries. Our goal is total customer satisfaction through continuous innovation in best practices and in technology by focusing on teamwork, integrity, and accountability, all in a safe working environment.



Atlanta Bonded Warehouse Corporation 3000 Cobb Int'l Blvd. Kennesaw, GA 30152 General: 770-425-3000 Sales: 678-322-3120 info@atlantabonded.com atlantabonded.com





A tlanta Bonded Warehouse Corporation (ABW) has provided public and contract food-grade, dry and temperaturecontrolled distribution services for over 60 years. In 2019, ABW handled 6.5 billion pounds of product through 5.3 million sq. ft. of capacity in 15 food grade warehouse facilities across the Southeast. This equates to 7.6 million pallets.

With our in-house carrier, Colonial Cartage Corporation, and our co-packaging expertise, ABW can build integrated solutions for your asset-based logistics needs in the Southeast, Southwest, Midwest, and Great Plains.

Multi-Client/Public and Contract Warehousing

Since its 1948 inception, ABW has offered multi-client/public warehousing services to its customers. Our customers from small to large enjoy the benefits of our superior customer service, strategic locations, and extraordinary attention to detail.

ABW has extensive experience operating contract (dedicated) facilities where either ABW or the customer owns or leases the facility, using either our Tier 1 WMS or the customer's proprietary system to drive any array of services required for the business application. Our operations routinely score best-in-network across multiple Key Performance Metrics and we have received numerous awards for operational excellence.

Transportation Services

Colonial Cartage Corporation, our in-house carrier, is a full service carrier providing food-grade, dry and refrigerated TL, LTL, and pool distribution services for over 60 years. Colonial provides regularly scheduled temperature-controlled LTL delivery to all points in the Southeast, Midwest,



Southwest, and Great Plains, as well as truckload and plant support services throughout its service area. As an asset based provider, Colonial's Services include consolidated order selection (bulk picking) and inbound consolidation to outbound cross-dock.

Co-packaging / Re-packing Services

ABW provides co-packaging and re-packing services to many of our contract and public warehouse customers. We store and manage packaging and supplies for our customers and are able to recover a high percentage of goods damaged in transit or in need of packaging corrections.

With over two decades of secondary packaging experience, and now primary packaging experience, ABW continues to grow and develop its capabilities, co-packaging or building over 10.5 million cases in 2019. We have experience operating:

- High-capacity, high-speed baggers and cartoners
- Overwrap, shoe box, and box pack lines
- Flex lines for shelf ready displays as well as quarter, half, and full pallet displays

What does ABW offer that others do not?

- Stability of ownership: same family for over 50 years
- A focus on our core competencies of warehousing, transportation, and co-packaging: not being everything to everybody
- A track record proving we are not interested in second place
- Long term investments in our facilities, technology, and people
- Quick decisions: change is not patient and you need answers
- Flexibility in pricing and structure: we are interested in a fair deal for a long time



Atlantic Container Line

A Grimaldi Group Company



Andrew J. Abbott President & CEO

Cargo capacity for ACL's G4 vessels includes:

- 420 ton quarter ramp enables load and discharge of oversized cargo
- 28,900m2 for high/ heavy roll on/roll off cargo
- 1,300+ vehicle capacity
- 3,800+ TEU cellular container capacity

ACL Featured Services:

- Weekly RORO Service to and from 7 North American and European Ports
- 4 weekly Transatlantic Container Services with Direct Calls at 15 Ports
- Unique ports, directly serving Baltimore, Halifax and Liverpool
- 2 UK port choices: Liverpool and London Gateway
- Fast connections to Ireland and Scotland
- Easy access to interior France and Germany
- RORO Service from North America to Asia, Baltic, East & South Africa, Mediterranean, Middle East & South America

Atlantic Container Line 1-800-ACL-1235 www.ACLcargo.com



ACL's new G4 (Generation 4) fleet, the Atlantic Star, Atlantic Sun, Atlantic Sea, Atlantic Sail and Atlantic Sky have been placed in their transatlantic service.

The G4 vessels are the first of their kind vessels and the largest RORO/Containerships (CONRO) ever built. They incorporate an innovative design that increases capacity without significantly changing the dimensions of the vessel. The G4s are bigger, greener and more efficient than their predecessors. The container capacity is more than doubled at 3800 TEUs, plus 28,900 square meters of RORO space and a car capacity of 1300+ vehicles. The RORO ramps are wider and shallower and the RORO decks are higher (up to 7.4 meters) with fewer columns, enabling much easier loading and discharge of oversized cargo. Emissions per TEU are reduced by 65%. The fleet continues to employ cell-guides on deck, a feature that will allow ACL to extend its enviable record. For over fifty years, ACL ships have never lost a container over the side.

The five new G4 vessels dramatically improve ACL's competitiveness on the North Atlantic. The G4s demonstrate to our customers that our Parent Company, the Grimaldi Group, continues to do things differently than all of its competitors. We employ unique ships, go to unique ports and carry cargo that others cannot carry.

The new G4 fleet will enhance our cargo carrying capabilities. Combined with

Grimaldi's ever-expanding service network, the G4s enable ACL to provide even more services as a high quality container and RORO operator for years to come.

Since 1967, ACL has been a specialized transatlantic carrier of containers, project and oversized cargo, heavy equipment and vehicles with the world's largest combination RORO/Containerships. The Company's headquarters are in Westfield, New Jersey with offices throughout Europe and North America. ACL offers four transatlantic sailings each week and also handles the Grimaldi Lines' service between the U.S. & West Africa and the Grimaldi EuroMed Service between North America and the Mediterranean. The Company also offers service for oversized cargo from North America to Asia, the Baltic, East and South Africa, the Mediterranean, the Middle East, and South America. ACL is a subsidiary company of the Grimaldi Group of Naples, Italy.



A Grimaldi Group Company



Bender Group



Steve Reid President

Bender Group combines a small business approach with innovative and technology-based logistics solutions to help companies of all sizes improve their supply chain systems, from the manufacturing source through delivery to multiple distribution channels.

We sincerely believe in...

- Keeping our Promises
- It Ought to Be Fun to Go to Work
- Listening
- Actively seeking responsibility
- Communicating in a straight line



Bender Group 345 Parr Circle Reno, NV 89512 800-621-9402 775-788-8800 775-788-8811 www.bendergroup.com salesinfo@ benderwhs.com





counded in 1945 by Edwin S. Bender in Reno, Nevada, Bender Group has over 70 years of experience in Supply Chain expertise. For almost three quarters of a century, Bender Group has provided outstanding logistics services to customers of every size and kind.

Starting with 60,000 square feet of space, Bender Group has continued to expand to over a million square feet with operations in Nevada, Virginia, and California. Bender Group offers a variety of warehouse and distribution services, international customs brokerage and freight forwarding and a complete transportation network including domestic brokerage, less-than-truckload, truckload and small parcel services.

Distribution and Omni-channel Fulfillment

Bender Group's chief focus is providing flexible distribution and fulfillment center solutions along with any related value added activities at a competitive price. We have the physical operations, information systems, customer service and expertise to handle the most complex distribution requirements including omni-channel fulfillment. With bicoastal fulfillment facilities, Bender Group offers delivery service to 99.6% of the US population within 1-3 days delivery.

Transportation

Whether you need national or regional LTL service via our core carriers, airfreight, or small package carriers or are interested in private fleet conversion, Bender Group can help you organize and streamline your transportation needs to give you the costeffective, on-time delivery of goods to meet your business needs.

International

Bender Group offers the full complement of services required to manage the global supply chain, including customs brokerage and freight forwarding, import and export services, and value-added expert consultation services. Bender Group knows what is required to navigate the everchanging world of trade and tariffs, while helping you make the strategic decisions necessary to compete on the world stage.

Information Technology

When CIOs are surveyed on what would improve their development or supply chain process, the overwhelming answer is increased visibility throughout their pipeline. Bender Group provides you with state-of-the-art systems, order processing, and communications systems to help you maintain clear visibility of your inventory and transactions from anywhere.

Why Bender Group?

Our company culture fosters proactivity, accountability, and execution. As a result, our logistics professionals have a deep sense of responsibility and empowerment to meet or exceed our clients' supply chain requirements. Bender Group has the agility to quickly implement intelligent ideas and technology, effectively addressing the everchanging dynamics of a company's supply chain.





Bronco Warehousing

Who We Are

After spending over three decades working in the freight brokerage industry, the Bronco Warehousing team decided to apply their wealth of experience to the shipping and warehousing industry. Over the course of those 30 years and through Bronco Warehousing today, we remain dedicated to providing exceptional customer service, costeffective warehousing solutions, and high-quality services.



ronco Warehousing offers a

Comprehensive range of warehousing services targeted to meet the needs of the cross-border market, including:

- Staging
- Storage
- Pick & Pack Services
- Labeling
- Kitting & Assembly
- FBA (Fulfillment By Amazon) Prep Work
- Customs Clearance
- Reverse Logistics (Returns)
- Shipping

Meeting Your Cross-Border Shipping and Warehousing Needs

Our unique location is a short distance from the United States and Canada border. We are within 500 miles of 40% of the United States population and over 65% of the Canadian population, enabling us to meet your needs with the agility that today's consumers demand.

We utilize a robust warehouse management system to give you unparalleled access to your inventory. Through our innovative customer portal, you can track your inventory, place orders, track shipments, and more with ease. Our depth of experience allows us to simplify your business and streamline your operations.

Why Bronco Warehousing?

- Decrease the time you spend on shipping, storing, and tracking your inventory
- Save money on storage and shipping through our streamlined system designed to reduce cost
- Access cutting-edge shipping solutions and technology to conveniently manage inventory
- Exceptional customer service
- Convenient location near the United States/Canada border



Bronco Warehousing

59 John Glenn Dr. Buffalo, NY 716-427-6626 joseph@ broncowarehousing.com

broncowarehousing.com



Burris Logistics



Donnie Burris CEO

Mission Statement

Our company is founded on deep-rooted values and comprised of four unique brand lines with a mission to be One Partner, Many Solutions. At Burris Logistics, we listen to your challenges to offer compelling and comprehensive solutions. Our doors and minds are always open as we collaborate on your endto-end supply chain management needs.

> Burris Logistics 501 S.E. 5th Street Milford, DE 19963

M: 802.922.0060 P: 302.839.5154

Corporate Contact Info Bobby Bailey VP of Marketing Email: rmbailey@ burrislogistics.com

BurrisLogistics.com One Partner Many Solutions





E stablished in 1925, Burris Logistics operates an expanding network of temperature-controlled warehousing and distribution centers from Maine to Florida and as far west as Oklahoma.

This fifth-generation, family-owned enterprise provides leadingedge logistics, transportation, and supply chain solutions, coast to coast, through four distinct Business Units: Burris Custom Distribution, Burris PRW Plus (Temperature-controlled warehousing and Direct to Consumer Fulfillment), Honor Foods (a redistributor of frozen, refrigerated and dry foodservice products), and Trinity Logistics (a global freight solutions provider).

For more information about our trend-setting logistics and deeprooted values® please visit www.burrislogistics.com.





C.L. Services

What We Stand For

In 1997, we set out to pave a new name in the transportation game. Our initial goal was to give shippers and carriers a freight brokerage service that uniquely combines the personal attention provided by a smaller brokerage with the technology and capacity of a large-scale freight management company. Today, C.L. Services continues to provide trusted transportation, while developing meaningful relationships with our carriers and customers along the way.











C.L. Services, Inc. 4245 Intl. Pkwy Suite 125 Atlanta, GA 30354 800-533-3922 678-686-0933 (Atlanta) www.clservicesinc.com





A t C.L. Services, our experienced logistics team combines technology with dynamic industry knowledge to execute shipping solutions aimed to exceed your expectations. Our logistics professionals work diligently to ensure that your shipment arrives on time, keeping you updated every step of the way.

EXPERIENCE LOGISTICS AS IT SHOULD BE

C. L. Services opened its doors in 1997 with the goal of providing a worldclass logistics service and an unmatched customer service experience, based upon our Prosponsive® Approach. Since then, C.L. Services has continuously developed innovative ways to deliver tailored shipping solutions that combine the personal attention of a small 3PL, with the versatility and capacity of a largescale freight management organization. Today, C.L. Services continues to build on the foundation laid over twenty years ago, offering trusted freight services and innovative solutions, backed by the industry's most dynamic team.

ONE COMPANY TO MEET ALL YOUR NEEDS

Trusted by Fortune 500 companies and small businesses alike, C.L. Services' commitment to 24/7/365 customer service and reliability makes us a top choice in the industry. Our innovative training program keeps our employees updated on the latest technology and market trends, helping our team have knowledgeable and informed conversations to help save you time and money. Our carrier compliance division continually monitors our carrier network to maintain our industry leading standards, allowing us to leverage our 45,000+ strong carrier network and maintain a 95% on-time standard.

C.L. Services is a full-service, asset-based 3PL, offering truckload, LTL, refrigerated and dry van, intermodal, cross-docking, container services, trailer pull and more specialized freight services. If you have freight to move, we have the equipment to move it on-time and in budget.

STRESS-FREE LOGISTICS

When you work with C.L. Services, you work with the future of logistics. We quickly evaluate and choose from the best rates, the best carriers, the best pick-up and delivery times, all in one place and on-demand. We book your load with the C.L. Services carrier match program. You will feel confident your freight is in reputable hands every time. We monitor your shipments from pick-up to delivery; we know where it is, shipment status, and when it will be there! We believe in transparent, Prosponsive® Logistics. Your job gets easier when you turn it over to the pros at C.L. Services.

- Full transparency with track and trace 24/7/365
- A select group of consistent people assigned to your account
- Live after-hours communication
- Freight optimization technology
- Expert consulting services
- Expedited & guaranteed shipments





Capacity LLC



Jeff Kaiden *Chief Executive Officer*

Capacity works with brands that need valueadded order fulfillment. Our passion for executing to the highest standards of excellence sets us apart from the competition.

We take an engineeringbased approach to problem solving, and see innovation as an everyday resource we always have on hand.

At Capacity, it is always our mission to deliver fulfillment solutions that delight and build trust with brands, consumers, and retailers in our target markets.

Capacity 1112 Corporate Road North Brunswick, NJ 08902 732-348-7224 inboundlog@ capacityllc.com www.capacityllc.com



C apacity fulfills tens of thousands of e-commerce and pick and pack orders daily. We can modify product, create gift sets, replace unit cartons—anything that helps our clients unlock value and delight customers. We enable clients to ship to hundreds of retail trading partners, complying with EDI and other requirements. We are an omnichannel order fulfillment provider, with decades of experience handling higher-value consumer products.

Our engineering, process-based, approach to problem solving and execution is how we deliver exceptional solutions. We design our facilities, processes, and technology with careful attention to each individual client need. Capacity's in-house teams of engineers, programmers, and operations specialists ensure we can respond in real-time to all the challenges that modern fulfillment presents.

We have on-site experts available when clients need to discuss a range of topics, from creative problem solving to supply chain challenges that occur away from our facilities. When our clients want to think creatively to improve product packaging, we are there. We have the experience, vendors, and equipment to make it happen. If our clients just want to connect about another crazy day navigated successfully, we are there. We know just how much energy goes into getting product to the end consumer. Capacity's culture of excellence is the difference that helps our clients build their brands, giving us a charge that never goes away.

If a project seems out of the ordinary, clients count on Capacity to provide the extraordinary. We do the basics well, but it's the unexpected where we truly excel. That's where we are at our best, and where our clients experience the greatest value. That's the Capacity difference. That's why our clients get what they want, when they want it, the way they want it. That's our idea of 'fulfillment delivered.'

Capacity provides global fulfillment solutions from our locations in New Jersey, California, the United Kingdom and France. Our US locations are close to the major ports of Newark/New York and Los Angeles/Long Beach. Our UK location is close to Gatwick Airport, and in France we are near Lyon. These strategic locations allow for reduced transit times, access to our clients' key markets, and we are always expanding our footprint and our geographic reach.





Cass Information Systems, Inc.

Cass Information Systems, Inc. is the leader in customized freight bill audit, rating, payment and business intelligence services.

Cass has the most industry experience in implementing complex processing systems that meet the unique internal requirements of large companies. Our system architecture allows us to provide customized solutions. We do not fit companies into a "standardized" system. Cass prides itself on providing system solutions that companies are unable to develop internally, or with other service providers.

In business since 1906 and processing freight invoices since 1956, Cass continues to offer stability, security, and expertise in the freight payment market.



Cass Information Systems, Inc. 13001 Hollenberg Drive Bridgeton, MO 63044 314-506-5500 Fax: 314-506-5840 www.cassinfo.com



ass is the leading provider of freight audit, payment and business intelligence services, leveraging over 60 years of experience in providing solutions to major corporations having complex transportation payment and information needs. By understanding our customer's critical transportation and accounting processes, we provide customized business intelligence solutions that help create a competitive advantage through reduced costs, increased efficiency, and better decision making capability.

Our goal is to not just duplicate existing systems but to provide enhancements to the freight processing system that will help to maximize a customer's supply chain efficiency. Cass' team of industry experts perform an in-depth analysis of your unique needs.

Solutions

- Cass offers solutions in these key areas:
- Freight bill processing and payment
- Freight bill auditing
- Freight accruals
- Freight rating
- General Ledger Accounting
- System design and development
- Electronic billing conversion
- Package level audit and reporting
- Vendor compliance reporting
- Carrier compliance reporting
- Billing procedures
- Business Intelligence
 - Standard and Custom Reporting
 - Benchmarking
 - Web-based reporting and analysis
 - Dashboards
- Carrier services
 - Freight bill inquiry
 - Exception analysis

Financial Security

Cass Information Systems Inc. is a Financial Holding Company. We are publicly held and traded on the NASDAQ Stock Market (CASS). We furnish our financial information and projections to the Securities and Exchange Commission and the NASDAQ on a regular basis.

We comply with the provisions of Sarbanes-Oxley and we make the SOC 1, Type II Auditing Standard Report available to our customers and prospective customers.

The Power to Deliver: Transportation Spend Solutions



Experience and Service

We substantially invest in personnel and the required technology to ensure we provide superior customer support and service in our relationships. Our Customer Service Team includes an assigned Account Manager who manages the customer relationship with representatives from systems, operations and carrier relations. This level of customer support provides the highest echelon of quality services, and the most extensive customer oriented focus in our industry.

Global Visibility

Visibility to global transportation spend is essential for effective supply chain management. The single best source for gaining this visibility is a robust, bestpractice, global freight audit and payment solution. Our global business intelligence platform provides an integrated, global view for transportation spend, usage, and trend information.

Contact Cass today to learn more about the freight audit, payment and business intelligence solutions that you can count on today and into the future.



CenterPoint



Bob Chapman CEO

We're Built to Solve It

CenterPoint is an industrial real estate company made up of dedicated thinkers, innovators and leaders with the creativity and know-how to tackle the industry's toughest challenges.

And it's those kinds of problems—the delicate, the complex, the seeminglyimpossible—that we relish most. Because with an agile team, substantial access to capital and industry-leading expertise, those are exactly the kinds of problems we're built to solve.

CenterPoint Properties

Corporate Headquarters 1808 Swift Drive Oak Brook, IL 60523 630-586-8000 centerpoint.com





W ith a track record of closing the most complex industrial real estate deals ever, you can count on us to deliver forward-thinking solutions for your development, acquisition and management needs.

Leading Expertise

Our wide-ranging expertise enables us to complete complex industrial real estate projects reliably and quickly. Backed by more than three decades of investment, development and management experience, we are an innovator in the investment, development and management of industrial real estate and multimodal transportation infrastructure.

Because we believe that the most efficient approach to shipping and distribution requires thoughtful diversification across multiple modes of transportation. CenterPoint has multifaceted experience in the development and redevelopment of inland and intermodal ports. Combined with our relationships with railways and logistics providers and our expertise in site selection, we're exceptionally equipped to meet the growing demand for transportation and logistics solutions in key markets across the country.

CenterPoint's National Reach

CenterPoint is highly active in the investment, development and management of industrial real estate and multimodal transportation infrastructure in the United States. We have a growing national platform that targets port and intermodal markets around the country. Whether you are looking to buy, sell, lease or build, our expert team is ready to tackle your supply chain challenges.

Local Market Experts

As a leader in logistics infrastructure and transportation-advantaged properties, CenterPoint has an active presence in strategically located ports and distribution hubs throughout the nation. In each of our markets, we can deliver on your industrial real estate requirements, including traditional build-to-suits, world-class intermodal centers, container storage facilities, truck terminals, state-of-the-art distribution centers, light manufacturing facilities, campus and park development, data centers and more.

We bring localized expertise, broker relationships and community connections to all our key markets. Through our focused industrial real estate activities spanning investment, development and asset management, we help our clients and our partners become more successful – maximizing the strategic value of their real estate assets and providing them with more efficient access and proximity to ports, rail terminals, major interstates and population centers.





CFI



Greg Orr EVP TFI US Truckload

Vision:

Our core purpose is to create an environment where we inspire personal growth; promote service in our community; and provide opportunities for our CFI families.



customer.assistance@ cfidrive.com 800-641-4747 cfidrive.com





TRUCKLOAD

Driving together since 1951, CFI is a progressive and stable partner, providing an industry-leading 97% on-time service to our supply chain partners. Beginning with one truck and trailer, CFI grew to become one of the most respected names in trucking. Now 2,000 power units and over 7,000 dry-van trailers strong, the CFI fleet delivers long haul, regional, and dedicated solutions. A TFI International, Inc. company since 2017, CFI exceeds over-the-road expectations in the North American market. To better serve the full customer supply chain in Mexico and Canada, CFI proudly offers CFI Logistica and CFI Logistics. We pick up and deliver safely and on time as promised.

CFI's core values of safety, family, commitment, and teamwork drive the organization's efforts to deliver the highest service possible. On and off the road, CFI family members demonstrate this culture by supporting charitable organizations, advocating for groups in need, and respecting the professionals who have made the trucking industry what it is today. The CFI True to the Troops, She Drives CFI, and the inaugural First Responder wrapped fleet promote the values of equality and respect within the industry. These working tractors demonstrate our commitment to moving the industry forward. An awardwinning carrier in sustainability, culture, and service, CFI is a progressive partner.

CFI LOGISTICA

Established in 1985, CFI Logistica delivers outstanding logistics and cross-border service to and from Mexico. Inbound crossborder goods from Mexico are seamlessly managed and expedited for delivery into distribution centers, where they are staged for order fulfillment and final-mile delivery via an owned intra-Mexico LTL network. Over 90,000 cross-border loads are handled per year with CFI Truckload.

CFI LOGISTICS

CFI Logistics utilizes unique ownedasset capabilities through CFI Truckload and other TFI sister companies to provide complete supply chain solutions across North America. This distinctive carrier base sets CFIL apart from the competition. These close relationships and utilization of carriers recreate the outstanding service CFI provides. CFIL utilizes over 60% of our carrier pool more than 80% of the time; double industry standards. From specialized and heavy haul to project and field delivery, our carriers are ready to meet the challenges that customers face.





Jeff Groenke VP of Sales and Implementation

We call our platform Cheetah LOOP® (Logistics Operations Optimization Platform) and it covers the Logistics space from A to Z, including First Mile, Last Mile, Healthcare, Retail, Courier, Delivery, Freight, Truckload and LTL, 3rd Party Carriers for Hire and Private Fleets.

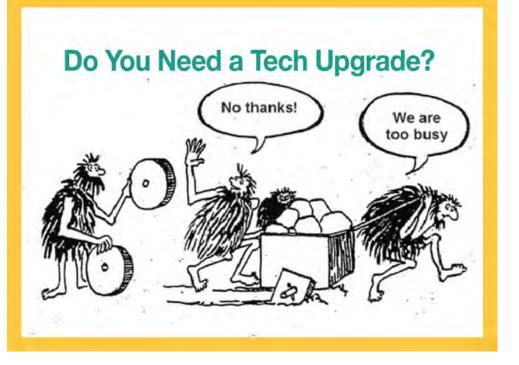
Our propriety algorithms are designed to both accurately and realistically model your current logistics supply chains using machine learning and AI. Cheetah LOOP[®] automatically generates alerts when disruptions occur to provide your team with the most relevant information to help resolve problems - including insight into the orders affected, recommendations for best resolution, visibility and potential financial impact.



Cheetah Software Systems, Inc. 31280 Oak Crest Dr., Ste #3 Westlake Village, CA 91361 805-373-7111 info@cheetah.com www.cheetah.com



Cheetah Software Systems, Inc.



Cheetah LOOP

With Cheetah LOOP®, you can capture and program your detailed business rules into Cheetah's real-time dynamic/ autonomous route optimization engine to produce an optimized daily plan. The plan is then distributed to your drivers and maintained in real time as cancellations, re-schedules, line item updates, delays and live traffic occur. The result being that the driver, dispatch, customer service rep and most importantly your client are all in sync. ETA information and visibility of all the drivers are available in real time all the time. As well, communication and information conveyed between driver, dispatch, customer service and your client are autonomously displayed for the most optimized action to be taken. Having the visibility of correct client data turns hours of planning to minutes, while enhancing your customer's experience.

Cheetah LOOP[®] can easily manage on-demand same-day orders to be routed and optimized daily. Drivers are assigned new pickups which are added to their existing plan. The entire plan is then automatically re-optimized to its most efficient form in real time. Autonomous dispatch and auto routing enables dispatchers to manage exceptions with Cheetah LOOP's analytics for decision support and reduces routine manual tasks by as much as 60%-70%.

Cheetah Software Systems

Cheetah LOOP® is the only operations solution that not only plans delivery routes, but also predicts extremely accurate arrival times as it adapts, live and automatically, to changing operational conditions. The Cheetah platform easily integrates with your current customers' enterprise technology platforms and supports a multitude of verticals.

We are not just a logistics software building a better way to get around; We are a technology company reformatting the future of mobility with predictive adaptive optimization.







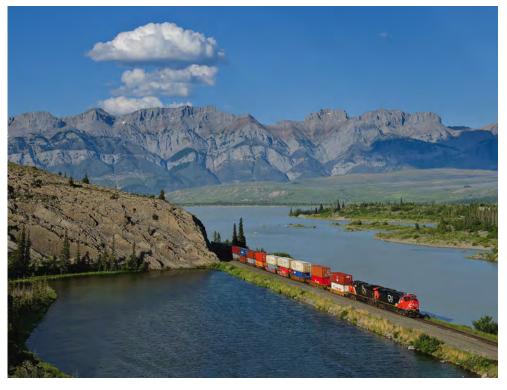
CN

Your Transportation and Logistics Provider in North America



Keith Reardon Senior Vice President, Consumer Product Supply Chain

"We are well-positioned to serve a growing consumer economy with transportation options that bring more supply chain flexibility to our customers which helps them win in their markets."



CN is a leader in the North American transportation and supply chain logistics industry — focused on innovation and collaboration. We offer integrated shipping solutions, including intermodal, trucking, freight forwarding, warehousing and distribution. With a rail network of 20,000 miles and 23 strategically located intermodal terminals close to major North American distribution centers — we are well placed to offer easy access to major U.S. markets and all Canadian markets.

CN is an indispensable transportation provider for many key sectors of the North American economy, from grain and forest products to industrial and automotive products — moving raw materials and intermediate and finished goods to markets around the world. By working together with our supply chain partners we make sure our customers get their products to market as efficiently as possible — using innovative solutions that drive sustainability and ensure long term growth. CN is a true backbone of the economy; fostering prosperity in the North American markets we serve and helping our customers win in the global market place.

Whether you're shipping locally across CN's vast North American rail network, or globally through the many port gateways we service on 3 coasts, we connect you with the people that matter most — your customers.



Montreal (Headquarters) 935 de La Gauchetière St. W Montreal, Quebec, Canada H3B 2M9 Sales: 1-888-MOVIN CN www.cn.ca







Continental Expedited Services

Unmatched Urgency Continental Expedited Services is second to none when it comes to speed. Moving freight anytime,

day or night. Right now.





Full Selection of Transportation Tools and Services

CES has all the tools your business needs to move freight quickly and easily.

Air Options

Continental offers a variety of door-todoor air solutions as an indirect air carrier through our network of over 200 airfreight and air charter service providers.

Freight Rescue

Continental will do whatever it takes to get your cargo moving quick. Repackaging, assessment of distressed freight, and warehousing are often part of the recovery effort.

Surface Expedite

CES is your one-call solution for all ground shipments in North America. We provide exclusive use, door-to-door service to all parts of the United States, Canada, and Mexico.

Special Handling

Inside deliveries, temperature-controlled transport, pallet jack services, custom packaging and liftgate services are just a few ways we take care of our customers.

Expedited Service to Mexico

CES has built a reputation as the go-to solution for expediting to Mexico. Like a hot knife through butter, CES cuts through borders quickly and cleanly. Experience and attention to detail is the name of the game.

Continental has hubs in both Monterrey and Querétaro, as well as storage and airfreight capabilities throughout Mexico.

Our 24-hour service center can provide a complete solution to your time-critical needs—within minutes. We also offer intra-Mex and cross-border warehousing.

- Experienced Bilingual Staff 24/7
- Web Tracking & Total Visibility
- EDI Capable
- Hazmat Certified
- Customs Bonded

CES has over 20 years of experience crossing borders. Our priority is to make it as quick and easy for our customers.



Continental Expedited Services

2718 Union Hall Road Clarksville, TN 37040 855-SHIPCES customer.service@ shipces.com continentalexpedited.com







Corporate Traffic Logistics









DRAYAGE



Corporate Traffic 6500 Bowden Road, Suite 202 Jacksonville, FL 32216

Toledo 904-400-6004 1715 Indian Wood Circle, Suite 230 Maumee, OH 43537

Charlotte 704-944-5855 3800 Arco Corporation Drive, Suite 300 Charlotte, NC 28273

800-787-2334 Fax: 904-727-6804 cti@corporatetraffic.com www.corporatetraffic.com





C orporate Traffic Logistics began in the imaginations of three brothers who dreamed of achieving success in the same industry as their father, who ran a trucking company. Chris, Chad, and Craig Cline went on to start Corporate Traffic in 1992 with the goal of creating a worldwide logistics company their father would be proud of. Today, the dream is real—we're still family owned and operated, and we deliver the goods, even when others can't.

We have pioneered a dual-service approach allowing our trucks and logistics services to work in tandem. And we deliver your goods on time, intact and on budget. Known internationally for a comprehensive range of capabilities, Corporate Traffic has built a reputation for offering a higher level of service, owning the entire logistics process from start to finish.

Our accomplished professionals work with cutting-edge technology to make doing business with Corporate Traffic easy, rewarding and remarkably affordable. We work hard to build strong relationships with our clients, and constantly seek better ways to meet their needs and exceed expectations, whether by full truckload, less-than-truckload, intermodal services or dynamic technology.









COSCO SHIPPING Lines (North America) Inc.



OSCO SHIPPING brings the highest quality of ocean cargo transportation services to every corner of the globe, with one of the largest, newest and 'greenest' fleets making frequent and timely calls to the busiest ports worldwide. COSCO SHIPPING delivers your containerized cargo quickly, economically and securely, interfacing with rail, road, barge, air and more, with advanced equipment and technology leading the way to absolute supply chain efficiency. And, there is no other ocean carrier who knows China better.

Your China Partner

With long and detailed experience in moving cargo in and out of the interior of China, COSCO SHIPPING is your guide to selecting the right feeder services, barge, railroad, and trucking companies. With local offices and representatives positioned strategically in all of the manufacturing and production cities across China and Asia, COSCO SHIPPING can save you time, money and paperwork in getting your shipments prepared and on to port locations. COSCO SHIPPING truly is your China partner, with accurate and comprehensive advice available to you by phone, fax, web, and other sources on a real-time, around-the-clock basis. No matter if you are just beginning to trade with China or are an old China hand, COSCO SHIPPING can add value to your supply chain.

E-Lines is E-Sweet, Now Includes the New Customer Portal

COSCO SHIPPING provides you with the tools to make the shipping process seamless, easy and efficient. Our new E-Lines web service helps you check routes and rates, collect details and documentation, share data, generate bills of lading, track and/or redirect inbound and outbound shipments, and maintain accurate metrics and reporting. Our E-Lines e-suite saves you time, effort and aggravation, and is backed by a global network of ocean cargo specialists ready 24/7 to assist in any part of the process. See it and try it through the new COSCO SHIPPING Customer Portal at support.cosco-usa.com

The Ocean Alliance

COSCO SHIPPING is part of the Ocean Alliance, the largest operational agreement ever made between shipping companies. With more than 40 maritime services, we will be sharing our fleet with the largest Asian shipping companies. By offering more ports and more direct calls, as well as better transit times, we will provide our customers with unmatched quality services. This new offering is a cornerstone of our strategy as it reinforces our competitiveness and strengthens our position as a key player in the shipping industry.

We Deliver Value

COSCO SHIPPING doesn't just move ocean cargo, we make moving ocean cargo a better part of your bottom line. 50 mainline services, 85 offices in 160 countries serving 1000 ports around the globe all add up to a world-class ocean carrier with worldwide capabilities. Contact COSCO SHIPPING today!



COSCO SHIPPING Lines

(North America) Inc. 100 Lighting Way Secaucus, NJ 07094 866-830-2550 elines.coscoshipping. com/usa





CT Logistics

Confidence, Trust, Leadership, Traditions since 1923.



Allan J. Miner President

The associates of CT Logistics are committed to providing superior supply chain business services and software solutions.

Our leadership has been earned with over 97 years of client confidence and trust. ISO 9001:2015 SOC II



CT Logistics 12487 Plaza Drive Cleveland, OH 44130-1084 216-267-2000 sales@ctlogistics.com ctlogistics.com





CONFIDENCE

CT provides more than 97 years of experience with comprehensive, broad supply chain accounting and business intelligence solutions tailored to meet your company's unique needs. We give you the confidence to trust CT, a premier provider in freight bill audit and payment, along with transportation management services. It is our desire to assist you in managing your transportation spend and data so you can focus on what matters most, which is efficiently and effectively running your supply chain management programs.

TRUST

Small firms to Fortune 100 corporations across the country, and around the globe, have trusted CT to assist them in making solid informed decisions regarding their freight bill audit and payment challenges. Our team of professionals has been instrumental in assisting our clients by utilizing our expertise and technology to maximize their ROI and provide the flexibility they need to compete in an everchanging, global marketplace.

LEADERSHIP

CT is a leader in the freight bill audit, payment and transportation management services industry. CT's portfolio of software solutions includes: our TMS software, CTLion[™], our customized freight audit & payment system, AuditPay^{sst}; our rating and routing program, FreitRater^{sst}, and our exclusive shipper's co-op program, TranSaver^{sst}. We take paths least explored to find solutions that will keep your company abreast of shifting business environments and opportunities to remain ahead of your competition.

CONFIDENCE. TRUST. LEADERSHIP. TRADITIONS SINCE 1923

They've become part of an important 97 year tradition that our clients have come to rely on when partnering with us. But just as important is the future the CT team will help you build. Our services and software are constantly evolving to provide you with the latest leading-edge tools and technology with user-friendly applications that will help manage and reduce logistics costs while adding value and more to your bottom line.

Visit www.ctlogistics.com for more information about our firm. Or call (216) 267-2000 Ext. 2190 to speak with one of CT Logistics' knowledgeable representatives regarding your company's freight transportation, logistics or global supply chain challenges.







CTSI-Global

Total Logistics Technology + Intelligence



J. Kenneth Hazen CEO

Founded in 1957, CTSI-Global solves supply chain challenges by transforming logistics data into actionable insights.

Services

- Managed Logistics Services
- Honeybee TMS
- Spend Management
- Strategic Data

In a world of complex supply chain data, go Global.





CTSI-Global

1 South Prescott Memphis, TN 38111 Phone: +1-888-836-5135 solutions@ctsi-global.com ctsi-global.com

Locations: Memphis • Atlanta • India • Ireland • Singapore





Your Global Logistics Ecosystem CTSI-Global is the largest private

freight audit tech provider in the world, processing \$15 billion in transactions every year. Versatile managed logistics services, robust TMS, legendary spend management, and Strategic Data create end-to-end supply chain solutions that fit your business. Our tech solutions automate processes, improve performance, and decrease transportation costs for national, regional, and global shippers.

We care about our clients. We adapt our strategic solutions to your global trade needs, and our dedicated business analysts provide tactical support and all-inclusive business reviews.

Managed Logistics Services

• Experts optimize your logistics strategy while providing full visibility as we navigate the intricacies of your supply chain.

Honeybee TMS

 Comprehensive TMS to plan and execute shipments: Manage orders, optimize loads, select carriers, tender shipments, manifest parcels, track shipments, and manage claims.

Spend Management

• Eliminate payment errors, save time and money, and offload contract management and the most advanced freight audit and payment.

Strategic Data

• Business intelligence dashboards and benchmarking tools empower you to visualize, synthesize, and analyze trends in your shipping data, centralized.

Your business depends on timely, accurate, and complete visibility to execute shipping and manage transportation spend. Invest in CTSI-Global to reduce your costs and stay competitive in the global marketplace.





CyberLogitec Americas



William Peterson Managing Director

Mission Statement:

CyberLogitec America, Inc. is a division of CyberLogitec, headquartered in Seoul, South Korea. CyberLogitec is committed to providing global, end-to-end, advanced technology solutions and technical consultation to the supply chain and strives to be the number one provider of technologies that lead the way in supply chain automation, communication and collaboration.

CyberLogitec Americas is focused on delivering and supporting logistics technologies to regional freight forwarders, operational solutions to regional shipping lines, and EDI services and support to regional container terminal operators.



www.cyberlogitec.com





yberLogitec empowers the global supply chain with advanced technologies that solve operational challenges and meet industry demands. For more than two decades, CyberLogitec has worked with the largest shipping lines, container terminals, and logistics providers to help them manage end-to-end operations and optimize business processes through modern, flexible, integrated platforms.

Servicing the end-to-end supply chain, from maritime shipping operations, port and terminal operating systems to logistics freight forwarding, CyberLogitec's solutions help industry partners adapt quickly to operational needs by providing actionable visibility. CyberLogitec's advanced algorithms digitize and automate data exchanges to improve customers' overall performance, efficiency, competitiveness, productivity, and service.

The CyberLogitec Americas Support and Services team offers business consulting during the evaluation and implementation processes, utilizing extensive industry expertise. Then they will continue to support the operation long after implementation is completed.

CyberLogitec continues to invest in developing innovative supply chain technology solutions that will improve collaboration, communication, and visibility across the supply chain.

CyberLogistics by CyberLogitec

OPUS Logistics by CyberLogitec is an integrated logistics platform that manages all freight forwarding processes including sales, accounting, and warehouse inventory. Offering flexibility in operational



management, visibility for customers, complete management reporting with integrated accounting functionality are OPUS Logistics core competencies. Importing, exporting, bills of lading, sales, and related accounting and reporting procedures can be automated and centralized.

The latest version of OPUS Logistics is an enterprise, cloud-based software-asa-service (SaaS) platform that is easy to access and reduces IT infrastructure costs. Always stay up to date on the latest version and enable your team to access the data and reporting, anytime, anywhere. Maintain data integrity with a single source of truth.

Improving Visibility, Communication, and Collaboration across the logistics supply chain is a central part of the OPUS Logistics system. The SmartLink service platform works with OPUS Logistics to expedite customs clearance and improve collaboration with shipping lines, shippers, and overseas partners, while reducing paperwork and repetitive documentation. Finally, our Visibility Portal enables shippers to have real-time visibility into the location of their cargo.

To learn more and schedule a demo, visit www.cyberlogitec-americas.com.





Descartes Systems Group



Edward J. Ryan Chief Executive Officer

Mission Statement

By combining innovative technology, powerful trade intelligence and the reach of our network, Descartes delivers the industry's most complete offering of cloud-based logistics and supply chain managment solutions.

Proven Expertise

With thousands of customers worldwide, Descartes has a proven track record of helping companies drive logistics value by automating processes, enhancing service, improving profitability and ensuring compliance. Descartes' headquarters are in Waterloo, Ontario, Canada and the company has offices and partners around the world.

DESCARTES

Descartes Sales Inquiries International: 519-746-8110 x 202331 North America: 800-419-8495 x 202331 Email: info@descartes.com www.descartes.com

Transportation Management

- Shipper TMS
- Real-time Visibility
- Capacity MatchingRetail Distribution

Parcel Shipping
Freight Broker

- Freight Broker
 TMS
- Dock Scheduling and Yard Management
- Data Analytics for Transportation Management

Routing, Mobile and Telematics

- Route Planning and Optimization
- Dispatching and Tracking
- Mobile Apps
- Telematics and Compliance
- Appointment Scheduling
- Fleet and Driver Performance Management
- Data Analytics for Routing, Mobile & Telematics

B2B Connectivity and Messaging

- Logistics Messaging
- o Air
- o Ocean
- o Road
- o Express and Postal
- Commercial/B2B Messaging
 - o B2B
 - o Order-to-Cash
 - o Procure-to-Pay
 - o Supplier Compliance
 - o EDI-Managed Services
- Customs Messaging

 Customs Authority Connectivity
 Broker Connectivity

Customs and Regulatory Compliance

- Security Filings
 - o North America
 - o EMEA
 - o LatAm
 - o APAC
 - o ROW
- Customs Declarations
- o Canada
- o United States
- o Europe
- Product Classification and Duty Determination

DESCARTES

Uniting the People & Technology That Move the World.

Denied Party Screening

- Export Compliance
- Other Government/Industry Programs
- o Partner/Other Government Agencies
- o Industry Program Support (CSA, C-TPAT, EU Green Lanes)
- o Ocean Regulatory Services

Broker and Forwarder Enterprise Systems

- Shipment Management
- Customs Compliance
- Accounting and Billing
- Warehousing and PO Management
- Customer Portal
- Classification
- Denied Party Screening
- LSP Lead Generation
- Value-added Services

Global Trade Intelligence

- Product Classification and Duty Determination
- Denied Party Screening
 - o Screening and Sanctions Compliance
 - o Audit and Resolution
 - o Sanctioned Party Content
- Export Compliance
 - o Export Classification
 - o Controlled Technology
 - o Export Automation
- Duty and Tariff Data
- Import & Export Data
- Trade Research

Ecommerce Shipping & Fulfillment

- Ecommerce Connectivity
- Warehouse Management
- Shipping
- Home Delivery



DF Young



A. Wesley Wyatt President and CEO

Mission Statement:

DF Young's mission is to always look at our clients' world through fresh eyes. With a strong commitment to our own staff that inspires creative solutions to international logistics, we set the stage for superior customer service that removes obstacles, builds trust and makes our customers' world more manageable.

DF Young Services

- Air Services
- Ocean Services
- Ground Transportation
- Customs Brokerage
- Security Management
- Documentation
- E-Business

DF Young Inc.



1235 Westlakes Drive Suite 305 Berwyn, PA 19312 Phone: 610-725-4000 Fax: 610-725-0570 www.dfyoung.com

Contact: Steve Giampapa Vice President of Operations 610-725-4000 steve.giampapa@ dfyoung.com

DF Young brings over 100 years of experience and creative thinking to integrated logistics services and complete supply chain management. Our specialized business units:

Automotive

For 85 years we've served automotive manufacturers in NA. SA. Europe, Japan and Australia, and work closely with the largest Ro/Ro carriers. Full Electronic Interface capabilities and ISO Registration. Services are geared to:

- Prototype and exhibition vehicle shipments
- Fully and semi-knocked-down shipments
- Built-up vehicle shipments

Commercial Goods

Full front- and back-end services support multinational manufacturers. international distributors, retailers and wholesalers. Includes Ocean/Air Import and Export and Import Customs Brokerage.

Front-End Services:

- Import/Export flow and distribution
- Quality Assurance program

Back-End Services:

- Vendor direct inventory
 - Reverse logistics
 - Store setup and fixtures

Supply Chain Services:

- Sole-source provider
- Just-in-time pick/deliver •
- Real-time tracking
- Simplified, competitive pricing
- Consultation services
- Full logistics services
- Total Quality Assurance
- Performance metrics/reports

Food/Humanitarian Aid

As one of the world's oldest companies providing this vital global service, we work closely with international relief and U.S. Government agencies. We provide computer recordkeeping, documentation and complete logistics solution.

Foreign Military Service

As a key logistics and shipping resource for Foreign Military Sales (FMS) since the inception of the U.S. Government Security Assistance Program, we provide full service support to participating foreign countries for all material handling and shipping.

Services include:

- Air and ocean freight shipping and/or charters
- Export licensing, documentation and packing
- Explosives call forward
- HazMat processing
- Inland freight services
- Repair/return processing
- Materials tracking/tracing

Petrochemical

DF Young handles the distribution of oil well supplies and project cargoes that are purchased and shipped to major petrochemical manufacturers worldwide.

Services include:

- Charters
- Contract management
- Purchase order fulfillment
- Documentation
- Online reporting
- General and project cargo
- Hazardous materials
- Air. ocean. land and rail transportation

Pharmaceutical Sample Distribution

DF Young maintains a Dedicated Pharmaceutical Division with highly trained operations and customer service teams specializing in the pharmaceutical industry. They provide a significant cold chain and launch experience.

Services include:

- PDMA compliance
- Pharma-specific packaging, labeling and transportation
- Convenient, time-specific delivery windows
- Field inventory transfers
- Agent service center providing real-time status updates
- Customized reporting for all service and financial requirements
- Cold chain warehousing and storage

dfyoun **Innovative logistics** solutions designed for your unique needs.





Distribution Technology



(Left to right): Tom Miralia, President & CEO; Rock Miralia, Principal Founder & Chairman of the Board; Mark Miralia, Vice President

We pride ourselves in offering each customer a unique, unparalleled client experience that sets the industry standard in reliability, accuracy, and dependability. Our goal is to develop robust, long-term relationships with each customer to improve and enhance their businesses processes ensuring success and exceeding expectations every single day.



Distribution Technology Inc. 1701 Continental Blvd. Charlotte, NC 28273 Phone: 704-587-5587 Fax: 704-587-5591 Email: rcantelmo@ distributiontechnology.com

DistributionTechnology.com





For over 50 years, Distribution Technology has helped businesses distribute their products globally with exceptional care, accuracy, and efficiency.

Today, a team of 250 dedicated staff utilizes modern technology and processes to help customers control distribution costs, increase speed to market, and make multi-channel shopping experiences more convenient and streamlined for the end user.

With capabilities to store and efficiently deliver retail goods, raw materials, food products, e-commerce, and more in our 1.2 million square ft. collection of distribution centers, we excel in exceptional third-party logistics, warehousing, and transportation across a variety of industries, supporting both B2B and B2C operations.

Channels We Serve

- Mass Retail
- Fast Moving Consumer Goods
- Industrial Materials and Products
- General Merchandise
- Building Materials
- Paper Products
- Specialty Chemicals
- Specialty Grocery, Beverage, Confections

End-to-End Solutions

Warehousing. Our facilities are equipped with temperature-controlled, food-grade, secure storage capacity including additional storage for chemicals and a designated area for hazardous or flammable materials. **Transportation Management.** We take the frustration and hassle out of transportation, and by using our expertise in freight consolidation, we leverage multi-client volumes to collectively save money—improving efficiency, reducing transportation expense, and creating value that benefits our entire customer base.

Manufacturing Support. We work with manufacturing clients synchronizing the flow of raw materials and work-in-progress to support just-in-time production, along with managing finished goods storage with flexible warehousing at less overhead and capital expense. This ensures you meet your promises to your customers.

Imports. With decades of experience handling imports and exports of products and raw materials, we have the ability to streamline hundreds of container floor loads weekly, allowing you to optimize your own capacity as needed.

Direct Rail Access. Our facilities are strategically located with rail-served direct access to the Norfolk Southern Railroad, giving you the advantage of seamless transloading through our DC from truck to boxcar, boxcar to truck, or to container.





DLS Worldwide



Tom Griffin President

DLS Worldwide Simplify Logistics Management with Our Leveraged Platform

DLS Worldwide optimizes your distribution and controls your costs through our spectrum of integrated services, unique sources of capacity, and global, technology-based delivery network.

Rely on DLS Worldwide for:

- Domestic LTL & Truckload
- International Air, LCL and FCL
- Expedited Air or Ground with Same Day, Next Day or Two Day Options
- Parcel Services
- White glove solutions including install & unpack, liftgate delivery and more

RRD Logistics DLS Worldwide

1000 Windham Parkway Bolingbrook, IL 60490 877-744-3818 www.rrd.com/dlsworldwide





DLS Worldwide (DLSW) offers proven efficiency

DLS Worldwide can help optimize your distribution and control costs through a wide spectrum of services, capacity, and technology.

As an experienced shipper, we know the challenges you face day in and day out. We've been there. This makes us uniquely qualified to provide you the logistics services you want and deserve.

Easy-to-use technology

Gain better visibility into every stage of the shipping process — from any device, in real time. From obtaining quotes to managing freight, our proprietary software system — DLSW Connect — is designed with you in mind.

We make connection simple with multiple integration options including single sign-on, EDI, API, as well as plug-ins for major CMS platforms. The DLSW Connect on-boarding process is backed by a fully dedicated team to instill confidence through trusted direction.

From the simplest to the most complex shipments, our technology ensures your shipping experience is seamless, transparent, and hyper-connected.

Experienced Agent Station Network

Our nationwide Agent Station Network is DLSW's strongest asset with more than 140 stations across the U.S. providing 24/7 availability, all staffed with knowledgeable, experienced personnel

Bolstered by solid carrier partnerships and the power of an established Fortune 500 company, we offer the local knowledge, personal attention, and experience you need.

Services for any mode, any size, any time

DLSW's expert staff will match you with the right mode and carrier to deliver your goods where you want, when you want. We offer a variety of services to meet your every shipping need.

For more than 150 years, many of the world's most storied brands have relied on RRD Logistics to connect with their customers. With DLS Worldwide, now you can too.





DSC Logistics



Ed Bowersox CEO DSC Logistics



Sung Yup Suh Deputy CEO DSC Logistics



DSC Logistics, a CJ Logistics Company

DSC provides dynamic supply chain leadership for customers based on collaborative partnerships, innovative solutions and high-performance operations.



The Global SCM Innovator

We have joined with CJ Logistics, accelerating our transformation strategy to deliver customer value in new and expanded ways.



At DSC Logistics, we combine innovative solutions, collaborative partnerships and high-performance operations to unlock the potential of your supply chain. We've joined with CJ Logistics, The Global SCM Innovator, creating an integrated global network with expanded capabilities.

Integrated Global Solutions

End-to-end visibility across a global network fuels innovation and optimization potential.

TES (Technology, Engineering, Systems & Solutions)

Designing both for today and the supply chain of the future, our solutions feature network simulation, artificial intelligence (AI), automation, big data, internet of things (IoT), advanced material handling equipment, autonomous vehicles, conveyor systems and robotics.

Transportation Solutions

Our expertise and tools help customers explore scenarios, predict events, identify opportunities and optimize networks. Freight forwarding, asset-based and cross border transportation services can be integrated with our managed transportation and warehousing services.

GREATER TOGETHER

Logistics Center Management

Known for our large-scale, long-term and highperforming warehouse operations, we provide customized logistics centers with a wide range of size and complexity, and have expertise in highly regulated industries and environments.

Supply Chain Packaging Services

Our solutions include in-network co-packing, production lines, repacking, returns and specialized packaging. We help customers preserve resources and protect product by performing packaging services within their own warehouses and networks.

Supply Chain Consulting

We provide a variety of consulting services with expertise in supply chain analytics, network modeling, engineering, technology and operations. Our experience serving leading global companies across a variety of industries enables the insightful advancement of leading practices. Our practitioner advantage ensures feasible, actionable solutions that we stand behind.

Learn more about our strategic solutions and how they can strengthen your supply chain: **dsclogistics.com/solutions**

Integ

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OUR SOLUTIONS

- Integrated Supply Chain Solutions
- Transportation Management
- Supply Chain Packaging Services
- Information Technology
- International Freight Forwarding
- Business Process Integration
- Supply Chain Consulting
- Industry Insights

- TES (Technology, Engineering, Systems & Solutions)
- Logistics Center Management
- Business Intelligence
- Retail Consolidation + Requirements
- Global Supply Chain Network
- Cross-Border Transportation
- Asset-Based Transportation
- Omnichannel



Dynamic Logistix



Jeff Auslander Chief Executive Officer, Managing Partner

Mission Statement

At Dynamic Logistix we believe that the transportation industry, specifically shippers and carriers, should have access to a 21st Century logistics management solution to help them lower costs, save money and reduce wasted time.

X.TMS Program Portfolio

- 24/7 Visibility
- Carrier Management
- ERP Integration
- Freight Audit & Pay
- Custom Real-Time Dashboards
- Business Intelligence Reporting
- Dedicated Account Management
- Load Optimization
- Claims Management

Dynamic Logistix

7220 W 98th Terrace Overland Park, KS 66212 913-274-3800 info@shipdlx.com





Save money, save time...

Dynamic Logistix specializes in deployment of our Transportation Management System (X.TMS) to create increased visibility, automation, integration, reliability and cost savings to shippers across the continent. We bring turnkey transportation to our clients — we sometimes call it the 'easy button' that saves time and money for the shipper. Our expertise and best-in-class technology bring definition and opportunity to our carriers so they can become part of our partner solution for our shippers. With experience of over 50 TMS

deployments, we don't just know how to create an exceptional experience for our clients — we know how to create that experience quickly and ensure its staying power. Implementation, automation and training of X.TMS with Dynamic Logistix takes on average 8 to 10 weeks in an industry that usually takes 8 to 12 months. On the carrier capacity side, we have 8,500 contracted carriers and have access to over 12,000 more. We commit time to get to know our carrier base and work to bring consistent 'core' carriers to each client we serve. Our technology, our culture and our carriers allow us to provide premium solutions for Full Truckload, LTL, Flatbed, Refrigerated and Hazmat loads.

What makes us Dynamic? We believe we have the best and most Dynamic People who use expertise to serve our clients and partners. We never stop developing superior service and technology solutions. Call it an X-Factor, call it Dynamic, call it what you want, just know that you will experience something with Dynamic Logistix that substantially rises above conventional standards of shipping.

Bring your transportation management into the 21st century with Dynamic Logistix.

#82 Fastest Growing Company in America - Inc. Magazine 2019

Best Place to Work in Kansas City - Kansas City Business Journal 2019





Echo Global Logistics



Doug Waggoner Chairman & CEO

Transportation Simplified

- Services Offered:
- Managed Transportation
- Truckload
- Partial Truckload
- LTL
- Intermodal
- Expedited
- Small Parcel
- International Air & Ocean





____ 2019 ____





Echo Global Logistics

600 West Chicago Ave. Suite 725 Chicago, IL 60654 800-354-7993 Fax: 888-796-4445 www.echo.com





cho Global Logistics (NASDAQ: ECHO) is a leading provider of technologyenabled transportation and supply chain management services. From coast to coast, dock to dock, and across all major modes, we connect businesses that need to ship their products with carriers who transport goods quickly, securely, and cost-effectively. Echo simplifies the logistics process so our clients can focus on what they do best.

Relationships

Echo has built solid partnerships with over 50,000 carriers, creating a robust network that matches the needs of our shippers with the needs of our carriers. Our capacity and geographic coverage allow us to move 16,000 shipments every single day for our 35,000 clients.

Technology

The core of the Echo offering is proprietary technology. Quickly adaptable and highly scalable, our best-in-class technology supports the experienced Echo team in simplifying our clients' transportation and utilizing our carriers' capacity. Through technology, we ensure better data collection and transmission, seamless communication, comprehensive reporting, and real-time visibility. EchoShip, Echo's self-service shipping platform, consolidates and simplifies shipping by enabling customers to build loads, store frequently used shipment information, and track shipments in realtime. Shippers can also search, view, and pay all invoices using EchoShip. EchoDrive, Echo's web portal and mobile app for carriers, was built to give carriers the ability to book, manage, and get paid on freight hauled for Echo. EchoDrive also provides carriers real-time access to search, view, and bid on available Echo freight.

Service

Above all, Echo values exceptional service in every client interaction. Our commitment to excellence and innovation, delivered by the industry's most talented transportation professionals, means we recognize that one solution does not fit all. Echo evaluates each client's transportation needs, discovers efficiencies, and delivers simplified transportation management—all with a relentless focus on execution.





ElectriCities of North Carolina, Inc.



Brenda C. Daniels Manager, Economic Development

"It's no coincidence that some of the state's most dynamic growth has occurred in our public power communities. Advanced manufacturing, food processing, metalworking, plastics – any power-intensive industry is going to find significant advantages here."

ElectriCities of North Carolina, Inc. 1427 Meadow Wood Blvd. Raleigh, NC 27604 www.electricities.com

Brenda Daniels Manager, Economic Development Ofc: 919-760-6363 Mobile: 919-218-7027 bdaniels@electricities.org





ElectriCities is a not-for-profit government service organization representing cities, towns and universities that own electric distribution systems: more than 70 N.C. cities serve 500,000 customers with 1 million customers served in N.C., S.C., and Va.

One of ElectriCities' roles is to represent member communities to expanding and relocating companies. We maintain comprehensive databases for all public power municipalities in North Carolina. Prospects can order detailed reports on dozens of sites, from mountains to coast. Within 48 hours of a request, ElectriCities will send profiles of locations that precisely match the company's specifications. "They find all the information they need in one place," says Brenda Daniels, the organization's economic development manager.

ElectriCities has recently implemented an enhanced site certification program called Smart Sites. Smart Sites are a slam-dunk choice for companies that are ready to grow now. This designation guarantees that a site has met stringent requirements and is "shovel-ready" for immediate development.

Each Smart Site has municipal electric service, water and sewer access within 500 feet, and is within five miles of an Interstate or Interstate-quality highway. Faster construction, fewer uncertainties and less risk for companies and site selectors alike. In addition. ElectriCities offers a certified industrial park that it has dubbed a "Prime Power Park," which offers 12 MW of on-site backup power generation. The park is in the city of Albemarle, located in the Piedmont's lake country. The Albemarle park has direct rail access from Charlotte/Douglas International Airport, clearly qualifying the area as a great rail intermodal site. "If a company has a critical operation that can't risk a power outage, they have a backup available, and don't have to spend the money to purchase a generator," Daniels adds.

The Smart Sites and Prime Power Park, like the rate-lowering services to all ElectriCities' customers, provide ongoing incentives for companies looking for an ideal logistics location.

ElectriCities remains a partner through the entire site-selection process, helping companies with utility-related issues, arranging site visits, and facilitating contact with local, county and state officials.

And these companies recognize the cost efficiencies and superior customer service public power provides. Municipal utilities don't have to pay dividends to shareholders, and those savings can be passed on to the utilities' customers.





ELM Global Logistics



Bill Conboy Founder & CEO

The most important characteristic of a 3PL is their dedication to achieving success. For over 35 years ELM Global Logistics emphasizes pride in their work, best in class performance and long term partnership relationships.



ELM Global Logistics 50 Emjay Blvd. Brentwood, NY 11717 800-736-1771 www.elmlogistics.com





ELM Global Logistics is a full-service, third-party logistics provider that has been tackling unique supply chain challenges for over 35 years. Our personalized approach to all our clients' needs is what sets us apart. We provide innovative logistics solutions while offering cost-effective solutions and speed to market to our customers.

At ELM Global Logistics we offer both shared and dedicated warehousing, packaging and fulfillment services, assembly, consolidation, cross-docking and transportation services. We are the largest in-house, full service rail siding on Long Island that is connected to the freight lines of all major rail carriers. We offer creative solutions that always encompass our customers' needs, rather than trying to fit them into a standard solution.

We service a diverse group of clientele and offer a complete range of services while still offering the flexibility to customize our services to their needs. Offering customers creative solutions, rather than trying to fit them into a basic solution, has always been our strength and belief at ELM Global Logistics. We combine methodical analysis of your material flow via intelligent application of systems designed to reduce and automate every step of the process.

Founded in 1979 by Bill Conboy, ELM Global Logistics operated with just a handful of employees in about 50,000 square feet of warehouse space in Long Island, New York. Over time, ELM Global Logistics has expanded its operations and now occupies more than 1,000,000 square feet throughout the Northeast region. Today, Bill continues to run the operation along with his wife, children, extended family and many dedicated employees which he feels contributes to the success and growth of this truly family-owned business.

ELM Global Logistics offers highly tailored solutions and technology that provides all customers with accurate, realtime information. It's our tightly integrated partnership approach that enables successful execution of complex supply chains within our customer base. We offer a combination of several powerful tools that can help manage your information, inventory, space and time.

Long or short term, we offer you the flexibility to grow your business which allows our customers to focus on their core business.

We put the "P" in 3PL — Pride, Performance and Partnerships... ELM Global Logistics, our 3PL.







John A. Evans President

Mission Statement

To be a strategic supply chain partner, admired for our people, passion and innovation.

Nine Point System

- 1. Listen
- 2. Innovate
- 3. Communicate
- 4. Assign Responsibility
- 5. Set Standards
- 6. Document
- 7. Implement 8. Monitor
- 9. Review

Evans Distribution Systems

vans Distribution Systems is a 91-year-old, full-service third-party logistics company located in Detroit, Mich. We operate seven facilities totaling nearly three million square feet. Our transportation operation includes 100 trucks, 150 drivers and 2,500 partner carriers. We operate from our five core business units:

- Warehousing Dedicated, contract, bonded and Foreign Trade Zone.
- Fulfillment -Integrations, small parcel volume discounts and real-time reporting.
- Value-added Contract packaging, shrink wrap, kitting and quality inspection.
- Transportation Competitive assetbased and brokerage transportation management solutions.
- **Staffing** Scalable staffing solution with qualified and vetted employees.

Reputation

Since 1929, we have built a reputation for quality and trust amongst our partners, employees and customers. We go above and beyond to support the local communities that we operate and live in.

Expertise

For 20 years, Evans has been ISO 9001 certified, and we also hold C-TPAT and SmartWay certifications. In addition, one million square feet is classified as Foreign Trade Zone and U.S. Customs Bonded.

Scalability

Our customers experience exponential growth when working with Evans. Through our seven locations, we can adapt to longterm or short-term contracts and shift people based on our customer needs and volume. Our diversified service offerings and staffing solutions allow us flexibility to accommodate shifts in your business.





Technology

Technology is the backbone of the supply chain. With a dedicated IT department, Evans is committed to providing the latest software, hardware and datadriven solutions to our customers. From machine vision/AI automation systems, to warehouse and transportation management software, to RF barcode scanning, EDI/API connectivity, and fulfillment integrations we use technology to optimize performance. We provide real-time visibility into inventory and shipments to all customers.

Diversification

Evans serves a variety of industries and business models. Customers range from consumer goods, furniture, automotive, food and beverage, chemical, hazmat, raw materials, robotics and more. Our expansion into fulfillment has positioned us as an expert of direct-to-consumer services.

Discover Why It's Easier with Evans

Discover how partnering with Evans Distribution Systems makes things easier for you. We simplify the complex supply chains so that you can do what you do best manage and grow your business. Call us and see for yourself at 1-800-OK-EVANS.



Evans Distribution Systems, Inc.

Corporate Headquarters 18765 Seaway Dr. Melvindale, MI 48122 1-800-OK-EVANS sales@evansdist.com www.evansdist.com





Evergreen Line

Mission Statement: FULL STEAM AHEAD Dedicated to Enriching Your Life

For 50 years and beyond, Evergreen Group has relentlessly explored more possibilities, building a comprehensive network at sea, on land and in the air.

Our pursuit of service excellence leads us to navigate our way to every corner of the world, enriching people's lives and creating a better future.

Evergreen Shipping Agency (America) Corp., as Agent for **EVERGREEN LINE** One Evertrust Plaza Jersey City, NJ 07302 201-761-3000 www.evergreen-line.com





Composed of the five shipping companies of the Evergreen Group, Evergreen Line is one of the world's largest container carriers, offering a capacity of approximately 1,300,000 TEU. 'Evergreen Line' refers to Evergreen Marine Corp. (Taiwan) Ltd., Italia Marittima S.p.A., Evergreen Marine (UK) Ltd. and Evergreen Marine (Hong Kong) Ltd and Evergreen Marine (Singapore) Pte Ltd. Evergreen Line was established and has grown in response to the requests and expectations of global customers. Its maritime activities contribute more than \$2.7 billion to the US economy.

As part of the East/West Trade OCEAN Alliance, Evergreen has the ability to provide cargo space on 330 vessels to 147 ports with 284 port calls per week. The company's global network offers 316 offices and agents located in 112 countries around the world.

The carrier has been certified by the Customs Trade Partnership Against Terrorism (C-TPAT) since 2002. Since May 2004, all vessels operated by Evergreen are certified by the International Ship and Port Security for compliance. Evergreen's E-Commerce capabilities—considered among the most up-to-date in the industry have been recognized by numerous groups and have been honored for excellence for four consecutive years by Log-Net, which gathers information from carrier users.

To further enhance service quality and competitiveness, Evergreen maintains its fleet renewal program as it continues to deploy vessels within the most suitable trades. The company has announced plans for fleet deployment that calls for capacity increasing from 2019 levels by more than 30% during the next 4 years, to a total of nearly 1,700,000 TEU. Introducing this additional capacity allows Evergreen to continue the replacement of older tonnage currently in operation, optimizing the efficiency of its operating fleet and enhancing its competitiveness within services. While building and upgrading its fleet, Evergreen Line intends to maintain each of the services it currently operates and will develop within new trades to meet the needs of its worldwide customer base.

Evergreen recognizes its obligation to conduct affairs constructively as a corporate citizen and has established an occupational Safety, Quality and **Environmental Protection Management** System for its container ships and shore-based personnel. The company is committed to being a responsible steward of our surroundings and its S-type Green Ships are outfitted with numerous features specifically designed to protect our environmental treasures. Evergreen Marine Corp. previously raised its first Green Bonds initiative with proceeds specifically earmarked for improving energy efficiencies, preventing and controlling pollution and developing strategies for a sustainable environment worldwide.







FIBRA Macquarie Mexico

At a glance

- December 2012 global offering represented the largest North American REIT IPO since 2006.
- Portfolio of 234 industrial and 17 retail/office properties, located in 20 cities across 16 Mexican states. Nine of the retail/ office properties are held through a 50/50 joint venture.
- Recently completed GRESB Assessment.

IBRA Macquarie is a Mexican real estate investment trust, listed on the Mexican stock exchange (Bolsa Mexicana de Valores). It is focused on the acquisition, ownership, leasing and management of industrial, retail and office real estate properties in Mexico.

FIBRA Macquarie was established on December 19, 2012 following a successful Initial Public Offering (IPO). Since then, the firm has been active in growing our portfolio utilizing a disciplined approach.

Opportunity

We believe that FIBRA Macquarie is wellpositioned to capitalize on the favorable long-term economic and demographic trends in Mexico. There are six key pillars which allow us to realize this opportunity for customers and investors:

- High quality portfolio in prime industrial and consumer markets
- Scalable internal property administration platform
- Strong track record of disciplined capital deployment
- Consistently strong operational and financial performance
- Flexible balance sheet and strong cash flow that will support future growth
- Experienced management supported by quality institutional platform

Our Team

FIBRA Macquarie is managed by Macquarie México Real Estate Management, which operates within Macquarie Infrastructure and Real Assets (MIRA). MIRA is a division of Macquarie Group and a global alternative asset manager with approximately US\$119 billion in assets under management, as of March 31, 2018, through specialized funds focused on real estate, infrastructure and other real assets.

FIBRA Macquarie is governed by a Technical Committee comprising over 80% independent committee members who have a wide variety of experiences and skills.



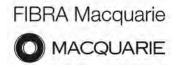




Sustainability

We support the communities in which we operate, and our buildings are safe and environmentally friendly. We understand the importance of maintaining a culture of transparency and a corporate governance framework that aligns the management of the business with the interests of customers and investors.

We are fully committed to implementing the best ESG practices by continuing to improve and enhance our internal processes.



FIBRA Macquarie Mexico

Pedregal #24 Piso 21 Col. Molino del Rey 11040, Mexico, CDMX Industrial Leasing Inquiries +52 81 8363 8399 industrial.leasing@ fibramacquarie.com Retail Leasing Inquiries +52 55 9178 7700 retail.leasing@ fibramacquarie.com



FLS Transportation



John Leach *Chief Executive Officer*



3X Customer Support



Proven Carrier Compliance



Every load covered No sweat. 54.000 CALGARY AB CARRIERS AMONG MED. INC. 400.000 TRUCKS SALTLAKE CITY: UT 99.7% ON TIME DELIVERY LOS ANDELES CA E. GA FLANTA, GA DALLAS, TR. .001% CLAIMS RATE AFATETTE LA TE TRANSPORT

The #1 3PL for Cross-Border Freight

And a perfect choice for your domestic freight too!

At FLS Transportation Services, we care about your freight. It is this mindset that not only sets us apart but has also earned us a place among the Top 50 Freight Brokerage Firms in North America and the distinction as the #1 3PL for cross-border freight. Ever since our humble beginnings in 1987 in Montreal, Canada, our team of logistics experts has been driven by a single shared goal: delivering every load on time, with the least amount of headaches. It's what shippers want. It's what carriers want. And, it's what we want. In an industry dominated by a lack of differentiation, we strive to be different with our 3x3 support; proven carrier compliance; and fair price guarantee. Our base of 54,000 carriers and 400,000 trucks ensures that we always meet this promise. 32 years, 430 employees, and 18 offices across North America later, we still take great pride in saying: **Every Load Covered. No Sweat.**

If you need freight delivered in North America contact us for a quote today!

FLS Transportation

400 Ste-Croix Avenue Montreal, Quebec Canada, H4N 3L4 www.flstransport.com 855-297-9197 | flstransport.com





Fortigo



George Kontoravdis, Ph.D. President

Mission

Provide logistics collaboration solutions to help customers streamline their supply chain, reduce operating costs, and improve productivity.



<i>EFORTIGO

ertigo offers one-stop

Collaborative logistics services to streamline the supply chain. Whether you are sending a letter, box, pallet, or shipping container, Fortigo TMS efficiently manages the ship-todelivery workflow, reduces operating costs, improves productivity, and enhances collaboration with carriers and vendors, all from a cloud-based system.

For companies seeking to enhance savings, improve

customer satisfaction, and increase profitability, Fortigo automates, optimizes, and audits logistics decisions. Fortigo plugs into established supply-chain applications and provides rapid return on investment by optimizing and deploying closed-loop logistics processes, minimizing ship-to-order times, and streamlining collaboration with logistics providers.

Contact us at info@fortigo.com to set up a demo and learn more.

Fortigo 8310 N Capital of Texas Hwy Austin, TX 78731 www.fortigo.com info@fortigo.com





Freight Management, Inc.



Robert Walters President

Mission Statement

We will be the staff our clients require to reach goals and achieve their vision.

Freight Management, Inc.

2900 E. La Palma Ave Anaheim, CA 92806 714-632-1440 www.freightmgmt.com





ver 40 years ago, Freight Management Inc. (FMI) began a revolution in Freight Cost Management and Freight Audit Services, reducing shipping costs for its customers. We were among the first to provide this service from which we derived our name: Freight Management — to save businesses time and money on their total freight operations.

Today, FMI remains one of the industry's most experienced, knowledgeable and capable providers of logistics management, including freight audit and payment services.

We offer flexible, customized client solutions based on the size, budget and goals of your company. In fact, one of our greatest strengths is applying our knowledge to your particular needs. Our competency and creativity in freight management puts us on the leading edge of technology with useful, accessible tools for our clients.

FMI is not carrier-owned.

And, because of our longstanding independence, we're unsurpassed in our ability to develop fresh game plans to adapt rapidly to changes that could impact your business. Being quick on our feet is one of the most potent skills we possess to keep your company ahead of the competition — and, of course, save you money.

Our number one source of business is our outstanding customer satisfaction. With many of our partnerships more than 10 years old, longterm relationships are at the heart of our service philosophy. We service a wide array of well-known clients. And, although we're not limited to working with any particular carriers, we also have longstanding relationships with all wellknown carrier companies.

Looking towards the future, a large percentage of FMI's expenditure goes toward the development of new software and tools that enhance our logistics services and maximize freight program effectiveness. With feedback from customers and carriers alike, our dedicated Information Technology department continuously improves and delivers innovative logistics solutions for you.

FMI plays an integral role in the development of Electronic Data Interchange systems and Automated Shipment Notifications for supply chain optimization. A few examples of the technological edge available to FMI customers include online pre-rating of shipments, up-to-theminute visibility of product transit and the ability to interface with any shippers' software.

Additionally, our clients receive personalized and confidential website access with a number of online services and benefits, including the ability to rate freight shipments before they leave the dock.



Your Global Logistics Expert





Georgia Ports Authority



Griffith V. Lynch *Executive Director*

OUR MISSION

The Georgia Ports Authority's mission is to empower entrepreneurs, strengthen industries, sustain communities and fortify families by relentlessly striving to accelerate global commerce.



Chris Logan Sr. Director, Trade Development, BCO Sales

Georgia Ports Authority

P.O. Box 2406 Savannah, GA 31402 912-963-6995 gaports.com





Phase I of GPA's Mega Rail project set to open

The Port of Savannah is the Southeast's busiest intermodal gateway. However, the Georgia Ports Authority is making a series of infrastructure improvements that set the stage to capture greater market share.

Key to expanding rail service is a project linking Garden City Terminal's two rail yards.

The project, dubbed the Mason Mega Rail Terminal, will allow GPA to build additional 10,000-foot long unit trains on terminal without disrupting nearby traffic.

Phase I of the project will open in the spring of 2020, with full completion expected by the end of the year. The rail expansion will improve efficiency and double terminal rail lift capacity to 2 million TEUs per year. Unit train capacity on terminal will build density into the system, and enable rail providers CSX and Norfolk Southern to deliver faster, more frequent rail service to markets along the Mid-American Arc from Memphis to Chicago and the Ohio Valley.

Bolstering Intermodal Strengths

From ship to shore to on-terminal rail, the speed and efficiency of GPA's intermodal services are unmatched. With the addition of the Mason Mega Rail Terminal, service to Mid-American Arc cities becomes more competitive. • GPA already features 27 trains per week to and from Mid-American Arc locations. Added capacity will provide new options, delivering reliable, consistent access to the Southeast and Midwest.

• Savannah currently offers the fastest westward transit times in the South Atlantic region, including overnight service to a five-state area - Alabama, Georgia, Florida, North Carolina and South Carolina.

• Port of Savannah customers moving containers by rail enjoy superior speed and reliability, with most cargo moving from vessel to rail within 24 hours.

• Savannah is just over 1,000 miles from Chicago by rail - comparable to other ports that are north of Savannah, but also farther east.

• Savannah rail providers Norfolk Southern and CSX Transportation provide doublestack container trains along the entire route between Savannah and the Midwest.

• Consistent, congestion-free movement from ship to rail cuts expenses and speeds delivery directly to the customer.

•As the first port of call on many Panama Canal shipping services, the Port of Savannah provides additional assurance of on-time cargo arrival.

Find this and MORE at gaports.com



GlobalTranz



Renee Krug CEO

Freight Driven by Technology

Solutions Offered:

- TMS for shippers, logistics service providers and carriers
- Managed Transportation
- Supply Chain Solutions
- LTL
- Truckload
- Partial Truckload
- Expedite
- Intermodal
- Air & Ocean
- Small Parcel
- Project Logistics
- Mexico Cross-Border





GlobalTranz Corporate HQ: 7350 North Dobson Rd., Suite 130 Scottsdale, AZ 85256 1-866-275-1407 info@globaltranz.com

With additional offices in: Charleston, WV • Chicago, IL Lombard, IL • Milwaukee, WI Minneapolis, MN Monterrey, MX Niles, IL • Prescott Valley, AZ Riverside, CA Salt Lake City, UT







hether you're looking to drive cost savings, simplify your logistics operations, or create competitive advantage from your supply chain, GlobalTranz has the logistics solutions and TMS technology to help your business grow.

GlobalTranz is more than a 3PL. We're a strategic partner providing awardwinning logistics solutions and cloud-based multimodal Transportation Management System (TMS) technology for shippers of all sizes.

Driven by our technology

Built to address realworld logistics challenges, GlobalTranz's TMS powers everything from fast rating, booking and freight management to real-time tracking, freight pay and audit, reporting and business intelligence. Load your own tariffs or use our rates and network of 34,000+ pre-gualified carriers. GlobalTranz's TMS simplifies logistics management, drives automation and delivers end-to-end supply chain visibility.

Powered by our people

Operational efficiency is our prime objective. It doesn't matter if you're an enterprise or small-scale shipper, local or national, first-time customer or longtime client. GlobalTranz will help you find the best solutions for your logistics needs. We'll work as your partner to provide supply chain planning, day-to-day execution and strategic recommendations to reduce your freight costs, improve operational processes and give you a competitive advantage.





GLT Logistics



Federico Restrepo

Enhance the Power of Your Supply Chain

Our coverage network expands throughout the United States, Canada, and Mexico.

OUR SERVICES

- Less than Truckload (LTL)
- Full Truckload (FTL)
- Heavy Hauling
- Container Drayage
- Expedited & Guaranteed
- Intermodal
- Cargo Insurance
- Warehousing and Distribution

GLT Logistics

Miami, Florida 305-938-0700 info@shipwithglt.com www.shipwithglt.com



GLT Logistics is a complete logistics and transportation provider focused on offering customized solutions to its customers; optimizing their time and costs, enhancing carrier performance, and addressing unexpected logistics situations by delivering services with control, visibility, and flexibility.

We work hard to stand out in the market and to build long-term relationships with our customers, creating custom-made strategies

according to their needs, and offering a wide array of logistics services. With the strategic combination of experienced industry professionals focused on providing real and friendly customer service and hightechnology tools, GLT delivers outstanding solutions that make a distinction in the logistics industry.

The heart of our company's value proposition focuses on being able to supply a successful service and to simplify our customer's job. To make these goals possible, we train our team members at GLT University, where they learn how to think outside the box and to manage each shipping situation creatively. We offer specialized teams focused on verifying each step of the shipping process so that they achieve the best results and a positive impact on our customers.

MODERN TECHNOLOGY

With an integrated and enhanced infrastructure, we offer an easy-to-use online platform for our customers to quote in seconds, dispatch and track loads, and have access to their reports, all in a consolidated environment. With these high-technology tools, we also offer the alternative of tailored, scalable, and customizable connectivity, including the ability to connect to other platforms through APIs. This contributes to customer efficiency and makes it even easier to access our logistics solutions with one click.

We're also working to enhance and provide even better customer service and process response time through artificial



intelligence in order to boost our efficiency without losing the personal touch that characterizes our company.

MORE HUMAN AND FRIENDLY SERVICE

At GLT, you'll never talk to a robot. Instead, a live and friendly expert will be standing by to answer all of your questions.

We've created specialized teams to support you all along the way. With GLT, you'll experience peace of mind.

GLT UNIVERSITY

Understanding how the industry works gives us the ability to provide tailored solutions to our customers.

We do our best to provide our customers with reliable, friendly, and knowledgeable customer service. To make this happen, we train our team members at a University we've created called GLT University focused on teaching our staff how to offer excellent customer service, how to resolve difficult situations with creativity by thinking outside the box, and to innovatively manage each logistics situation. This training program will give our team members the information and the competencies they need to successfully engage with our GLT customers.

Learn more about our company here: www.shipwithglt.com





Holman Logistics





Brien Downie President

Extraordinary Service for Over a Century

Our Core Purpose

Established in 1864, Holman exists to envision and bring into reality new concepts and ideas that help businesses operate more efficiently and cost effectively in order to improve the lives of people everywhere.

We strive every day to live by our Core Values:

- Safety Focus
- Be Better
- Show Respect
- Serve Others
- Extraordinary Service



Holman Logistics

22430 76th Ave. S. Kent, WA 98032 253-872-7140 Holmanusa.com





When the headquarters in the Pacific Northwest and operations across the U.S., we provide public and contract warehousing, manufacturing logistics, plant support, transportation, shuttle, collaborative logistics, and e-commerce order-fulfillment services.

We Are Experts in Partnering with Manufacturing Operations

We perform manufacturing logistics for both consumer package goods and durable goods clients, managing raw material inventories, material usage planning and delivery, quality control, lot control, and facilities maintenance.

We Provide a Broad Array of Ground Transportation Services

Our transportation services vary from truckload and LTL deliveries to spotting and shuttle services. Holman regularly pools LTL deliveries across customers to realize transportation savings.

We Have Experience in Your Industry

We serve a wide variety of industries, including CPG, paper products, beverages, food packaging, pet foods, electronics, home appliances, heavy equipment, and raw materials, among others.

We Create Lasting Relationships with Our Customers

As a privately-held company, we are not subject to shareholder requirements and quarter-by-quarter market results. This affords us the ability to both believe in and create lifetime relationships. We choose to invest in our people, in our processes, and in our clients.

Your Search for the Perfect Partner Is Over

The average length of our strategic customer relationships is over 34 years! We keep that business by providing extraordinary service. We know that your supply chain must add value to your product and to your customer's experience. If we do our job well, we'll help to ensure that your customers will build lifetime relationships with your business as well.





Hoosier Energy



Harold Gutzwiller Manager of Key Accounts and Economic Development

Mission Statement

To provide member distribution systems with assured, reliable and competitively priced energy and services in a safe and environmentally acceptable manner.



Hoosier Energy P.O. Box 908 Bloomington, IN 47402 Direct: 812-876-0294 Hoosiersites.com







oosier Energy is a non-profit generation and transmission cooperative (G&T) that provides wholesale power and services to 18 member distribution cooperatives.

Collectively, member cooperatives operate and maintain more than 36,000 miles of distribution lines and provide electric service to nearly 300,000 consumers or about 650,000 people in 59 counties in southern Indiana and southeastern Illinois.

Hoosier Energy's "all-of-the-above" power supply includes 2,000 megawatts of generation that includes coal, natural gas, renewable energy and power purchase contracts. Taken together, these resources provide the best balance of affordability, reliability and sustainability to meet member needs.

The G&T's interconnected transmission network includes nearly 1,700 miles of highvoltage power lines, 25 transmission stations and about 300 delivery points.

In addition, Hoosier Energy provides training, key accounts, marketing, communications and technical services to its member cooperatives. Hoosier Energy and its members are cooperative businesses that provide reliable, affordable electric power and carry on a long-standing commitment to improve the quality of life in our communities.

Our Commitment to Economic Development

Through Hoosier Energy's 2019 efforts, an estimated 2,500 new jobs and \$485M in capital investment was created in member territories. Because of this dedication and contribution to our counties' economic growth, the Hoosier Energy Economic Development program continues to be one of the Midwest's leading economic development organizations.

The Indiana and Illinois economic development program at Hoosier Energy provides comprehensive economic development services throughout our service territory. Some of these services include:

- Shovel-ready site listings
- Electric usage cost estimates
- Searchable business maps
- Searchable sites and buildings maps
- Personalized assistance

Our Commitment to Quality, Reliability

To help ensure a consistently reliable power supply, Hoosier Energy's power delivery system is connected to the regional power grid and interconnected with other utilities. As well, the power supply cooperative is a founding member of the Indianapolis-based Midcontinent Independent System Operator (MISO), which manages power flow, transmission reliability and power marketing throughout a 15-state region and parts of Canada.

The power supply cooperative has been recognized nationally for its environmental stewardship and education programs, including an education center, free electronic lending library for educators, and community watershed conservation efforts.

Each of the power supply cooperative's members elects a representative to the Hoosier Energy Board of Directors, which develops policies and reviews the co-op's operations. The chief executive officer and his staff carry out day-to-day management of the organization, directing a work force of more than 440 employees.



Hub Group



David P. Yeager Chairman & CEO



Phil Yeager President & COO









Hub Group 2000 Clearwater Drive Oak Brook, IL 60523 800-377-5833 info@hubgroup.com www.hubgroup.com



At Hub Group, we're more than transportation managers. We're a world-class supply chain solutions provider that offers multi-modal transportation services throughout North America. Our more than 5,000 employees deliver innovative, customer-focused solutions and industry-leading service to help customers better control supply chains and their costs.

Intermodal

Our flexible intermodal fleet combines 38,000 of our own 53-foot containers with access to 95,000 rail-owned containers to deliver effective solutions across North America. Supported by more than 2,500 drivers and strong carrier relationships, your shipments will benefit from top quality execution from door to door.

Brokerage

Harness our buying power with top carriers throughout North America to craft truly tailored truckload and less-than-truckload solutions. A unique mix of national and regional providers will deliver customized services that include committed capacity, project management, transactional capacity and expedite, each scalable to your specific need and supported by specialized equipment capabilities.

Dedicated

Our dedicated solution is built on years of award-winning expertise with customers across every vertical, with 3,000+ drivers and 5,500+ trailers operating coast to coast. Our solutions are focused on safety and efficiency, crafted to enhance service while reducing costs in key locations across your supply chain.

Logistics

Hub Group brings years of award-winning transportation solutions to generate efficiency and value throughout your supply chain. Our custom solutions utilize a multimodal approach backed by integrated technology and modeling to continually strive for meaningful savings. With Account Management resources and continuous improvement initiatives coupled with comprehensive business intelligence, your business will benefit from streamlined management and optimum visibility.

Consolidation and Warehousing

Ask about our retail freight consolidation programs and warehousing services optimized by proprietary technology. With critical mass at strategic cross-dock locations, your business will benefit from increased performance and reduced costs, while meeting the industry's top retailers' rigorous service standards.



Infor



Rod Johnson Head of the Americas and GM

Vision/Mission Statement

Infor's vision is to deliver best-of-breed supply solutions in the cloud and provide our customers with the deep industry functionality and scientific insight they need to manage complex, global supply chains. We deliver beautiful applications designed to optimize your end-to-end supply chain from source to deliver. We have a passion for customer success, and we pledge to be responsive, follow through on promises, reject mediocrity, be accessible, and communicate proactively.



Infor 641 6th Ave. New York, NY 10011 infor.com/scm





nfor is a global leader in cloud software products and combines best-in-class solutions to optimize your end-to-end supply chain and collaborate more effectively with customers, partners, and suppliers. With analytics at the core, gain greater visibility into your supply chain to optimize resources and labor, improve inventory and shipping accuracy, deliver the perfect order, and respond faster to customer opportunities and market fluctuations.

Infor CloudSuite Supply Chain Planning

Infor CloudSuite™ Supply Chain Planning (SCP) balances supply and demand through modular applications to tackle key areas of complexity—all while making use of a shared, powerful, end-to-end platform. The integrated planning platform uses complex algorithms, optimization techniques, and heuristics to derive plans from the strategic utilization of assets to tactical responses to unexpected market shifts. In-memory processing and a cloud-native architecture enables network-wide optimization and collaboration.

Infor Nexus (Global Trade Management and Supply Chain Visibility)

As the world's only single-instance business network, Infor Nexus provides end-to-end supply chain orchestration through a solution designed for the enterprise-level organizations across several specialized industries. Infor Nexus provides predictive intelligence which allows companies to proactively rearrange resource and labor utilization, inventory and shipping operations, and respond to fluctuations in the market. Infor Nexus builds communication by eliminating silos internally, as well as with suppliers, partners, and customers.

Infor Nexus Financial Supply Chain Management

Infor Nexus Financial Supply Chain Management connects all parties, documents, and systems in an automated ecosystem, allowing for exceptions management and N-way matching that not only digitize invoices, settlements. and supply chain financing, but enable strategic programs to improve working capital and assure supply. By connecting the entire supply chain on a single endto-end networked-platform, retailers and manufacturers create streamlined, more compliant transactions. This opens the door for innovation around supply chain finance and dynamic discounting, deductions management, and trading company models and first sale automation.

Infor CloudSuite WMS

Infor CloudSuite WMS is an advanced warehouse management system combining core warehouse functionality with labor management, task management, wave management, 3PL management, and more on one highly configurable, scalable database. The contemporary user interface, combined with an open API framework, enables advanced features such as Web RF, 3D visual warehousing, and voice processing, allowing you to manage multiple channels (B2B/B2C) from a single warehouse.



LOGISTICS PL

Intelligent Audit



Hannah Testani Chief Operating Officer

Mission Statement

Intelligent Audit aspires to help shippers reduce spend and ship smarter by leveraging the industry's leading audit and business intelligence platform.

O INTELLIGENT AUDIT

IA Headquarters 365 West Passaic Street Fourth Floor Rochelle Park, NJ 07662

Phone: 201-880-1110 Fax: 201-809-2616





The Missing Link in Your Supply Chain.

ntelligent Audit is the technology leader in parcel and freight audit, business intelligence, and transportation spend optimization.

IA's proprietary technology, paired with a team of strategic account managers, helps some of the largest and most complex global shippers analyze, benchmark, optimize, and gain critical insights into their global transportation network. With bestin-class audit and reporting technology, clients can leverage their data to reduce costs, enhance real-time visibility, and improve end-customer experience.

With more than 2,500 clients representing over \$12 billion in annual transportation spend, Intelligent Audit prides itself on providing customers with the tools and insights to help them ship smarter. Intelligent Audit's services include:

1. Freight Audit and Recovery

Systematic audit across all modes and regions with more than 150 audit touch points and a true contractual audit. Proprietary technology automates issue identification, claims submission, and recovery.

2. Business Intelligence and Analytics

Achieve real-time visibility to all global transportation activity in IA's proprietary cloud-based reporting portal. Leverage normalized data to track performance. identify inefficiencies, and prescribe solutions.

3. Spend Optimization

Determine optimal carrier/service mix based on business objectives. Utilize 'big data' to benchmark against like-shippers. Develop roadmap for network optimization strategies, such as zone skipping, footprint redistribution, or omni-channel fulfillment.

4. Financial Reporting

Manage complex GL coding and cost allocation by geography, business unit even SKU. Provide detailed accruals to track all unbilled carrier activity. Model landed costs and compare to budget forecasts.

5. Bank-backed Freight Payment

Streamline carrier payment processes to remove the administrative burden of remittance to numerous counterparties with the security and backing of Triumph Bancorp, Inc. (Nasdaq: TBK), a publicly traded financial institution and leader in carrier payment technology and supply chain financing.

6. Proactive Advisory Services

Dedicated strategic account advisors proactively analyze your data, identify issues, uncover opportunities for savings, and act as an extension of your team to help you implement industry best practices.







Eric Green Chief Executive Officer

Mission Statement

Creating jobs and opportunity by offering the most competitive environment for the movement of cargo and people.



JAXPORT and reach 140 ports around the world.

MORE OPTIONS

The Jacksonville Port Authority (JAXPORT) offers ocean carrier services from all major regions of the world, including regular container service connecting Jacksonville, Florida with ports in Asia, South America, the Caribbean and Central America, as well as customized container freight shipments and transshipment options to/from Europe and Africa.

With JAXPORT's prominence as a Roll-On/Roll-Off (RoRo) center, you have several services to manage your customers' vehicle supply chains. Whether shipping automobiles, heavy equipment, yachts and boats, machinery or other rolling stock, you'll have your choice of major RoRo carriers to link with all corners of the globe.

CLOSER TO MARKET

Jacksonville's strategic location allows shippers to reach a market of more than 70 million U.S. consumers within a day's drive. JAXPORT's intermodal network helps you connect to the consumer base regionally as well as to markets throughout the Southeastern U.S., Mississippi and Ohio River Valleys, and Midwest.

SUPERIOR LOGISTICS

JAXPORT terminals integrate seamlessly with three U.S. interstates, on-dock rail, 40 daily trains and more than 100 trucking and drayage firms. The port's equal balance of imports and exports provides backhaul opportunities, maximizing transportation savings.

A recent survey of shippers ranked JAXPORT the No. 1 port in the U.S. for customer service and performance excellence, and the port was recognized in December 2019 as the second most improved container port in North America for overall productivity.

THE JACKSONVILLE ADVANTAGE

Northeast Florida features 138 million square feet of warehousing and distribution space, a labor force of 845,000+ workers, and streamlined clearances via Foreign Trade Zone No. 64.

With your choice of intermodal services. dozens of ocean carriers, a growing consumer base and an outstanding highway and rail network – you'll find Jacksonville offers a transportation combination simply unmatched in the Southeastern United States.

Contact our JAXPORT team at 800-874-8050 or JAXPORT.com/cargo to learn how you can seamlessly connect your cargo with your customers today.



JAXPORT

2831 Tallevrand Ave. Jacksonville, FL 32206 800-874-8050 info@jaxport.com www.jaxport.com



Kenco



Denis Reilly President & CEO

"What I like about Kenco is that you are big enough to handle our business and everything we throw at you, but you are small enough that we are important to you."

- Customer Testimonial









Kenco 2001 Riverside Drive Chattanooga, TN 37406 Toll Free: 1-800-758-3289 kencogroup.com



Kenco is the largest woman-owned thirdparty logistics company in the United States. We provide integrated logistics solutions that include distribution and fulfillment, comprehensive transportation management, material handling services, and information technology—all engineered for Operational Excellence.

Privately-held and financially strong, we take our corporate responsibility seriously by engaging in ethical, honest, and sustainable business

practices. We are committed to charting a new path in the 3PL industry, offering our customers best-in-class solutions. With the scale and capabilities of a large corporation, Kenco also has the entrepreneurial agility and individual focus that empower our people and our customers to achieve longterm success.

We engineer creative solutions that provide tangible value with the highest level of quality, service, and continuous improvement in the following areas:

Distribution and Fulfillment

Kenco operates over 28 million square feet of warehouse space across North America. We perform services that go far beyond the receiving and storage of freight. Some of these value-added services include: network optimization, sequencing, raw materials management, product testing, vendor-managed inventory, and regulated pharmaceutical destruction. Kenco's technology solutions bring agility and flexibility to our customers. We offer the combination of several powerful tools to help you manage your information, workforce, inventory, space, and time.

Transportation Management

Companies rely on Kenco for innovative solutions to lower transportation costs, improve customer service, and reduce order cycle times. Our experts focus on your transportation needs so you can focus on your company's core competency. Kenco offers full-service transportation solutions, which include dedicated fleet management,



freight management, transportation brokerage, over the road transportation, and transportation management systems.

Material Handling Solutions

Kenco has been providing material handling equipment (MHE) and maintenance services for over 50 years. In addition to regional forklift dealerships, Kenco has the ability to provide on-site technicians that perform preventative maintenance and repairs. This service can substantially reduce equipment downtime and maintenance costs. We also offer a fleet strategy service that tracks and reports MHE data to allow management to make more informed equipment decisions.

Supply Chain Solutions

Kenco offers a combination of technology, operational expertise and logistics engineering to develop, execute and operate solutions that empower customers to achieve real-world results across even the most complex supply chains. Kenco is a nationally recognized leader in innovation, being one of the first and select few 3PLs to establish a dedicated Innovation Lab designed to test new and emerging technologies in a real-world warehouse setting.

Through our Women's Business Enterprise National Council (WBENC) certification, Kenco fulfills a unique market niche by offering high-quality and comprehensive services on a large scale while allowing customers to meet supplier diversity goals.





Kuebix



Dan Clark Founder and President

Kuebix Mission

Kuebix was founded in 2008 with the mission of leveraging the latest cloud technology to build a transportation management system (TMS) with Freight Intelligence that enables companies to capitalize on supply chain opportunities through visibility, control and the use of predictive analytics. That vision was realized when the Kuebix team of freight and technology experts launched Kuebix TMS, a next generation SaaS TMS that is changing how businesses of all sizes purchase freight.

Products/Services

- Kuebix TMS (Shipper, Business Pro, Enterprise)
- Premier Applications
- Integrations
- Managed Services

Thinking of Implementing a TMS? Download our "TMS Buyer's Kit" for resources to help you find the right TMS for your needs.

> Kuebix 5 Mill & Main Place Maynard, MA 01754 978-298-2100 www.kuebix.com





Kuebix provides a transportation Management system (TMS) that powers North America's largest shipping community. Kuebix is transforming the transportation industry with a common TMS platform for shippers, carriers and intermediaries that enables new levels of visibility and efficiency for the entire market.

By connecting all logistics stakeholders on a single platform, shippers gain unprecedented access to available capacity and competitive pricing, while brokers and carriers increase their business and gain superior asset utilization. In addition to connecting directly with carriers for all their contracted rates, Kuebix users can leverage Community Load Match, Kuebix's built-in truckload spot marketplace, to fill assets or find capacity without leaving the technology they use to manage daily operations.

Kuebix offers an array of integrations to help businesses connect internal and external technologies to completely manage their logistics operation within a single pane of glass. Popular among these are ERP integrations, like those with NetSuite and Microsoft Dynamics, which automatically populate order information from the ERP to Kuebix and vice versa. This greatly reduces human error, speeds up order creation and booking, and helps companies position themselves to make more strategic decisions. API integrations with Kuebix allow organizations to connect their e-commerce or quoting platforms. These integrations enable the shipper to leverage the power of the Kuebix rating, booking, scheduling and tracking engines in a single system, providing enhanced customer service.

As a modular, cloud-based solution, Kuebix can seamlessly scale to meet the needs of supply chains of every size and level of complexity. This ensures a diverse network of supply chain stakeholders power Kuebix's shipping community, resulting in superior collaboration opportunities. Kuebix offers rapid onboarding and optimal return on investment.

Connectivity, collaboration and visibility define Kuebix TMS. All Kuebix users whether they are shippers, carriers, brokers, freight forwarders or intermediaries—can realize increased efficiency through the use of Kuebix TMS. When all supply chain players connect and collaborate, everyone wins.





Landstar System, Inc.



Jim Gattoni President & CEO









Landstar System, Inc.

13410 Sutton Park Dr. South Jacksonville, FL 32224 877-696-4507 Solutions@landstar.com www.landstar.com





THE LANDSTAR ADVANTAGE

recognized industry leader, Landstar provides safe, secure, reliable transportation services delivered by our unique network of independent agents and capacity providers. Landstar customers enjoy personalized service at the local level with the global reach and resources of a multibillion-dollar company.

Safe, Reliable Capacity at a Cost-Effective Price

- One of the industry's largest van and platform selections with over 68,000 truck capacity providers under contract
- Expedited cargo vans, straight trucks and tractor-trailers
- 16,000 pieces of trailing equipment
- Access to 1,300 stepdecks, 1,100 flatbed trailers
- Drop and hook services
- Specialty trailers ranging from beam,

blade and Schnabels to double drop, stretch and multi-axles

Global Air & Ocean Freight Forwarding Services

- Import/export at major ports
- Air express, air cargo and air charter
- Licensed NVOCC
- Full & less-than-container loads, plus over-dimensional breakbulk

Rail Intermodal

- Boxcar, bulk, flatcar and tank capacity
- Contracts with major rail and stack train operators
- Service into Canada and Mexico







LFS



Andres Lopera CEO

We are driven by the desire to make a lasting impact on your business, by helping you reach your goals and overcome the challenges you may face along the way while shipping all types of freight.



LFS 10630 NW 37 Terr Doral, FL 33178 833-744-7537 marketing@lfs-inc.com www.lfs-inc.com





ere at LFS, we understand the difference between being a supplier and becoming a strategic partner.

We are a transportation management company that operates in North America. Our goal is to not only meet but exceed our customers' needs through excellent service experience, innovative solutions and highly competitive rates.

We are focused on assisting shippers, exporters, importers, cargo agents and individuals all over the world, by providing the best possible service, paired with stateof-the-art solutions and highly competitive rates.

HANDLED BY HUMANS

Brilliant ideas have the power to move the world. We believe our expertise and knowledge are the power behind our most important asset: great human beings. LFS teamwork has become a trademark that allows us to ensure it is more than just business... it's humans interacting with humans, providing you value and unmatched support in every transaction.

DRIVEN BY TECHNOLOGY

Amidst an ever-moving industry, digitization turns into a first-hand tool aimed at providing our customers visibility and traceability at the reach of their hand. LFS balances the sharpness of technology with the thorough understanding of the supply chain, offering countless possibilities at any stage of the logistics and ground transportation process.

DARE TO DIFFER

Isn't it amazing that the same company can help you haul from the smallest box to the biggest load? LFS has built strong and lasting relationships with top trucking carriers, airlines, intermodal carriers, container yards, railroad companies and many other key players in the supply chain across the U.S., Canada and Mexico, everything happening as you earn miles from our LFSrewards program. As easy as it gets, all your needs in a one-stop shop!

YOU NAME IT, WE HANDLE IT

Service has to be great. Versatility is a must. Period. LFS is strongly committed to delivering timely, personalized service to every customer, as a guarantee of the company's adaptability to special requirements and challenges. We believe attention to detail and tailor-made solutions can turn your strategies into meaningful business success.



Logistical Labs



Jonathan Evans Director of Client Solutions

Collect. Analyze. Take Action.

Our integrated suite of logistics and transportation software products helps you save time, control costs, strengthen margin, and manage your business more confidently.

ogistical Labs builds technology for collecting, analyzing, and deploying big data in the supply chain. With their suite of analytics products users can make better informed pricing and quoting decisions through datadriven insights and social collaboration. Open API access allows users to easily integrate products into their existing business applications for improved process efficiency. Logistical Labs



was named a Top 100 Logistics IT Provider by *Inbound Logistics* in 2018 and 2019. To learn more, visit www.logisticallabs.com.

LoadDex: All Rates, All Modes, One Search

Logistical Labs' pricing platform, LoadDex, drastically simplifies pricing and carrier selection across all modes. With a single search, users can compare thousands of rates from all types of transportation providers at once.

BidDex: Host Bids & Manage Your Carrier Network

Logistical Labs' carrier sourcing platform, BidDex, makes RFP management easy by letting users send and receive bids, analyze pricing data, and manage awards in one place.

The BidDex Bid Tracker allows you to source carriers on a load-by-load basis through your own private network. Simply submit a load and let your carriers send their bids. You can then track sourced carriers as they respond and accept or deny their offers from a single screen.

RailDex: Intermodal Pricing Platform

Shippers and logistics providers want a simple platform for intermodal pricing. RailDex connects your ramp service with your drayage rates so you can offer a comprehensive door-to-door solution with minimal effort and reach new industry verticals that wouldn't otherwise be accessible.

HeavyCarts: Technology for Shipping Heavy or Large E-Commerce Products

Logistical Labs helps shippers get e-commerce products to their customers by connecting them with all types of carriers parcel, non-parcel, less-than-truckload, truckload, brokerage, and more—to find the most competitive shipping rate at the point of sale.

API Connectivity

Integrate our products with your existing business systems and logistics tools through SQL, FTP, API, screen scrape, or iFrame products we're already integrating with.



Logistical Labs

640 N. LaSalle, Suite 555 Chicago, IL 60654 312-999-9762 info@logisticallabs.com www.logisticallabs.com



IOGISTICS

Lynden



Jim Jansen Chairman

At Lynden, our job is to deliver innovative transportation solutions to our customers.

Lynden began with a clear mission: put the customer first, deliver quality, and be the best at what you do. Today, Lynden's service area has grown to include Alaska, Washington, Western Canada, and Hawaii, with additional service extending throughout the United States and internationally, via land, sea and air. Our mission remains the same. Complex transportation problems can be solved in the hands of the right people, with the right tools and the right experience.



Lynden 6520 Kulis Drive Anchorage, AK 99502 1-888-596-3361 Fax: 907-245-1744 information@lynden.com www.lynden.com





ver land, on the water, in the air—or in any combination—Lynden has been helping customers solve transportation problems for over a century. Operating in such challenging areas as Alaska, Western Canada, the South Pacific and Russia, as well as other areas around the globe, Lynden has built a reputation of superior service to diverse industries including oil and gas, mining, construction, retail, seafood and manufacturing.

Lynden is a family of transportation companies with the combined capabilities of truckload and less-than-truckload transportation, scheduled and charter barges, intermodal bulk chemical hauls, scheduled and chartered air freighters, domestic and international forwarding and customs services, sanitary bulk commodities hauling, and multi-modal logistics.

The Lynden family of companies delivers a completely integrated freight

transportation package. Our people have the knowledge to quickly respond and solve your multi-modal transportation problems. From origin to destination, over any terrain, managing freight movement, as well as the flow of information, Lynden provides innovative solutions to meet your unique needs, keeping you in control while providing you with services no other company can match.

Lynden was founded on principles of integrity and quality. Its environmental commitment is based on a commonsense desire to be efficient and to do things right. Its culture of innovation and efficiency is completely in harmony with its commitment to protect the environment. Lynden's people, equipment, processes and technology are focused on the efficient use of resources and sustainable operations.

Proudly serving Alaska for more than 65 years.





Mainfreight



John Hepworth CEO

"Across Mainfreight's global network our customer sits at the very center of our business. Striving to consistently improve our quality and service, we believe the best people to make decisions are those right on the spot. Every one of us has the autonomy to think like we own the business and make educated decisions quickly. Through being closer to our customers both geographically and in our decision making, we become a faster and more valuable business. Autonomous decisionmaking also creates a generation of decisive future leaders with a hands-on understanding of both our business and those of our customers."

Mainfreight

1450 Glenn Curtiss St. Carson, CA 90746 800-283-8888 www.mainfreightusa.com





W ith a global footprint of over 260 branches in 24 countries, our extensive network looks to offer customized supply chain solutions for our customers. We aim to delight our customers by building strong partnerships and an understanding of their unique needs.

Backed by world-class technologies, our global business is built on two unshakable beliefs that we live by on any given day:

- The only way to keep ahead of
- our competitors is by the superior performance of our people
- The only measure of superior performance is how the customer perceives it

Transport

Whether you're sending goods next door, across the country or transborder to our neighbors, Mainfreight's comprehensive network lets us find the best match for time, cost and performance to meet your needs, by road, rail, sea or air. As a SmartWay Certified Carrier, we control your freight from door to door, ensuring a constantly high standard of service while being responsible to our environment. The EPA has recognized our dedicated linehaul and extensive branch network for its commitment to deliver to destinations in the US, Canada & Mexico utilizing commercially available fuel saving strategies and emission reduction technologies to help protect the communities we service today and improve air quality for future generations.

Air & Ocean

As an IATA-accredited cargo agent, Mainfreight Air and Ocean offer a total international shipping import and export service via sea or air and a full documentation service for customs clearance including MPI Biosecurity. Worldwide freight is made simple with our cost-effective core services and specialist teams providing quality service, superior information and a custom-made solution giving you the reach to take your business to the world.

Warehousing

Mainfreight Warehousing provides specialist warehousing and omni-channel distribution solutions across all industry sectors and commodities. Whether you have one pallet or thousands of pallets, Mainfreight provides an integrated supply chain logistics solution for you. We have built a regional warehousing solution that optimizes end customer distribution across the U.S. including multi-site solutions with the focus on finding the best answer for the challenges of our customers.



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2020

Mallory Alexander International Logistics



W. Neely Mallory III President





confidence delivered on time, with care, everywhere

Mallory Alexander International Logistics

4294 Swinnea Road Memphis, TN 38118 Tel: 1-800-257-8464 Fax: 1-901-370-4288 info@mallorygroup.com www.mallorygroup.com



Allory Alexander International Logistics is a leading third-party logistics provider. We support manufacturers, retailers and other suppliers in the storage and shipment of their valuable cargo, and we do it with confidence—on time, with care, everywhere. We recognize the invaluable role our customers play in the international economy and in lives around the world.

We navigate the complex logistics landscape and build safeguards into our processes, ensuring accuracy and providing our customers peace of mind. We create reliable yet nimble systems to meet our customers' dynamic needs, at every touch point, every time.

Your biggest challenges are met with creativity and supported by our offices around the world and warehouses at strategic U.S. locations. As a financially secure company, Mallory Alexander has the stability and commitment to develop longterm relationships in global commerce.

Rely on Mallory Alexander for superior supply chain performance around the world.

Experience

Mallory Alexander works to establish partnerships with our customers to develop customized business solutions that fit their particular needs, while ensuring that their corporate goals are met. Combining best in class operating procedures and systems with a comprehensive network of agents and service providers allows customers to maximize the value of their supply chain spend.

At Mallory Alexander, we align our objectives with our customers' objectives. As a solution provider first, we are not bound to a limited group of suppliers or services officers. Offering value added services such as customs brokerage, white glove delivery, fulfillment and repackaging services, along with a select team of dedicated employees, clearly distinguishes us from other third party logistics providers.

Expertise

For more than 94 years, Mallory Alexander has been providing our expertise to a broad



range of diverse logistics problems. We lend our expertise to a wide range of customers in many industries. Mallory Alexander services include:

- Public and Contract Warehousing Facilities
- Freight Forwarding and Brokerage
- International and Domestic Air
- Domestic Transportation
- NVOCC
- Customs Brokerage
- Supply Chain Consulting
- Managed Logistics
- Cargo Security
- IT Solutions

Excellence

Our commitment to your success requires nothing short of excellence. Mallory Alexander is fully licensed, ISO9001:2015 and C-TPAT certified. We participate in government agencies and third party training and seminars to ensure the highest degree of compliance with the US government regulations. We are a winner of the President's E-Award for Exporting Excellence and the President's E Star Award for the promotion of U.S. Exports.

Mallory Alexander offers a proud tradition of innovative logistics solutions, tailored quality services, and leading edge technologies delivered every day by the best professionals in the business. We recognize that people are our greatest asset and our success is based on the integrity of people who have a passion and commitment to serve their customers.

Mallory Alexander is right-sized with the expertise and flexibility that our customers demand. We are proud to call Memphis, TN home for our company headquarters and the foundation for all our global offices.



Mantis



Yiannis Panagiotopoulos CEO

Mission:

To provide customers with the best-in-class "self-serve" and scalable Warehouse Management/ Optimization/Automation platform.



Mantis 1000 Parkwood Circle Ste 900 Atlanta, GA 30339 678-784-4015 info@mantis.email www.mantis.group



Antis, established in 1996, is a leading international WMS/logistics software and solutions vendor with European origins. With 8 offices and many qualified partners, Mantis is present in 30+ countries in Europe, North America, Middle East and Asia.

Mantis' flagship Logistics Vision Suite (LVS) is the only highly scalable "selfserve" WMS/logistics platform in the world. Its design represents a great leap in WMS/logistics technology, offering outstanding adaptability and flexibility. It enables Mantis customers with complex warehouse operations to easily configure, deploy and support the WMS by themselves, thus responding fast to their continuously evolving needs while at the same time enjoying an unbeatable low multi-year TCO. It is also the WMS platform of choice for integrators because it allows them to perform fast and smooth implementations and painless ongoing support and thus to drastically increase their overall profitability.

More than 480 enterprises, many of them leading multinationals, representing all major industries (3PL, Retail, Distribution/ Wholesale & Manufacturing) and selling channels (traditional & multichannel e-commerce) rely on LVS to run and optimize their logistics operations. LVS customers spread across many vertical markets, such as Consumer Products, Food & Beverage, Fashion, Pharmaceuticals & Medical, Cosmetics, Grocery Chains, Appliances & Electronics, Building Materials, Tobacco, Spare Parts & Accessories, Chemicals, Books & Office Supplies, Furniture, etc.

LVS goes well beyond the management of the warehouse, offering extended capabilities such as value-added services, kitting, light manufacturing, dock & gate management, logistics customer/partner service, parcel management, centralized control of local and remote warehouses, advanced slotting, labor management, inventory optimization, flexible 3PL billing, comprehensive traceability management and powerful warehouse analytics.

Mantis complements LVS with flexible and affordable warehouse automation systems consisting of a smart combination of proven competitively priced technologies (Voice Picking, Pick-to-Light, Put Walls, Smart Pick Carts, Smart Glasses, RFID, etc.) that have been tightly integrated with LVS using advanced proprietary technology that significantly enhance automation's overall performance, while at the same time minimizes costs due to the elimination of any relevant 3rd party control software.

Finally, in order to strengthen its warehouse optimization offering as well as its presence in North America, Mantis acquired in 2018, Insight GT, Inc., a leading international Slotting and Warehouse Optimization software solutions vendor headquartered in Toronto, Canada.



Maryland Port Administration



David M. Thomas Acting Executive Director

Mission Statement:

The Maryland Port Administration (MPA) oversees and manages the six public marine terminals of the Port of Baltimore. It is tasked to stimulate the flow of waterborne commerce through the State of Maryland in a manner that provides economic benefit to Maryland citizens. The MPA directly markets, promotes, and facilitates trade through the Port of Baltimore while supporting both public and private Port facilities. The Port of Baltimore annually generates about 15,300 direct jobs, and nearly 140,000 jobs in Maryland are linked to the POB.



Maryland Port Administration 401 East Pratt Street Baltimore, MD 21202 800-638-7519 410-385-4400 www.marylandports.com





Nor ore than 300 years removed from its beginning as a colonial hub for the tobacco trade, then as a budding shipbuilding mecca famous for its "Baltimore Clipper," today the Port of Baltimore is widely celebrated for its specialization in moving a 20th century conveyance—the automobile. Among the most diversified cargo gateways in the United States, it is a leading port of departure and arrival for automobiles and roll on/roll off (ro/ro) cargo, while also laying claim as one of the top destinations for imported forest products, paper, gypsum, sugar, and iron ore.

Centrally located on the Atlantic Coast, the Port of Baltimore, which is managed by the Maryland Port Administration (MPA), is the farthest inland port in the United States with a 50-foot deep channel. Baltimore now has a 50-foot deep container berth that is ready to welcome the world's largest ships today.

It is also the closest Atlantic port to major Midwestern population and manufacturing centers and a day's reach from one-third of all U.S. households. Steel manufacturers in Pittsburgh, furniture makers in North Carolina, and consumers in Boston are all served in less than 24 hours from the port. In terms of transportation, the Port of Baltimore is located adjacent to the East Coast's primary north-south corridor, I-95, proximate to east-west running I-70, and is served by both CSX and Norfolk Southern railroads.

One of the unique aspects of the port's trade is the diversity of cargo moving through its facilities. With a balanced portfolio of automobiles, forest and paper products, ro/ro, and container shipments, the port hosts a variety of global shippers and is less vulnerable to precipitous drops in niche trades.

The MPA operates six public terminals: **1. Dundalk Marine Terminal (570 acres):**

- Containers, breakbulk, wood pulp, ro/ro, autos, project cargo, farm and construction equipment
- 2. Fairfield Automobile Terminals (104 acres): Automobiles
- 3. The Intermodal Container Transfer Facility (84 acres): International and domestic containers
- 4. North Locust Point Marine Terminal (90 acres): Wood pulp, lumber, latex, steel, paper, and containers
- 5. Seagirt Marine Terminal (284 acres): Containers
- 6. South Locust Point Marine Terminal (79 acres): Forest products





Matson



Matt Cox Chairman and CEO

Mission Statement To move freight better than anyone.



A leader in Pacific shipping, Matson's ocean transportation service is recognized for its industry leading on-time arrival performance and award-winning customer service. Its diversified fleet features containerships, combination container and roll-on/roll-off vessels and specially designed container barges. Matson's ships and assets are U.S.-built, -owned and -operated, which provides significant advantages in the integrated trade lanes of the company's operations.

Serving Hawaii continuously since 1882, Matson is uniquely experienced in carrying the wide range of commodities needed to support remote economies.

Providing a vital, reliable lifeline to the economies of Hawaii, Alaska, Guam, Micronesia and select South Pacific islands, Matson is a key supply chain partner allowing customers to rely on the company's dependable vessel schedules to continually replenish inventories.

Matson's China-Long Beach Express has a strong reputation in the Trans-Pacific trade for reliable, expedited service from Xiamen, Ningbo and Shanghai to Long Beach, consistently delivering the best transit times and offering next-day cargo availability on the West Coast.

Matson's Pacific services are further enhanced by the transportation and distribution network of the company's subsidiary, Matson Logistics. A leading provider of freight transportation, warehousing, and supply chain services to the North America market, Matson Logistics helps companies source, store, and deliver their products faster, more reliably and cost efficiently. Its services and technology are customized to drive efficiencies in—and costs out—of supply chain networks for retailers, manufacturers, and distributors.

Matson Logistics' sourcing, transportation, and distribution solutions include:

- Long haul and regional highway FTL and LTL service
- Domestic and international intermodal rail service with all Class I providers
- Specialized hauling, flatbed, and project logistics
- Contract and public warehousing at key East and West Coast ports including transload, cross-dock, and product preparation and handling down to the sub-SKU level
- Freight forwarding in Alaska; crossborder service to Canada and Mexico
- Value-added retail packaging services, light assembly, and product customization
- E-commerce fulfillment and DtC programs
- Asia-origin consolidation, PO management, customs brokerage, and NVOCC services for FCL and LCL shipments
- Online, on-demand portal to book, track, and manage your shipments—from source to store

Matson is firmly committed to operational excellence and providing its customers with the highest level of service across all modes of transportation.

Learn more at matson.com.



Matson 555 12th Street Oakland, CA 94607 1-800-4MATSON customerservice@ matson.com www.matson.com







MD Logistics



Mark Sell President and Co-Founder

Our Mission:

At MD Logistics, our mission is to support our team of leaders, dedicated to each other and our customers, in order to remain fast and flexible while providing custom supply chain solutions in a high quality environment, on time, every time.

MD Logistics

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> Reno Office: 12125 Moya Blvd Reno, NV 89506



MD Logistics is a third party logistics company specializing in customized supply chain solutions. Our vertical markets include Life Sciences and Pharmaceuticals. Retail and Consumer Goods, as well as Transportation Services. In addition to cold chain and foreign trade zone warehousing, our services range from packaging, fulfillment and distribution to global freight forwarding and

freight management.

Located in Plainfield, Indiana, and Reno, Nevada, our combined facilities include state of the art Pharmaceutical and Retail distribution space.

Life Sciences and Pharmaceuticals

MD Logistics designs customized supply-chain solutions for global distribution of trade, sample and clinical specialty products. Our facilities are fully licensed and accredited, maintaining cGMP and VAWD standards, enabling us to provide compliant cold chain storage for finished and WIP products. We deliver these standards through the utilization of Red Prairie WMS and strategically located state of the art facilities. We offer full integration with our customers' ERP software and support electronic data interchange for order management and reporting. Most critical to operational success, our dedicated and experienced pharmaceutical team stands behind our services to ensure the utmost product quality and maximum customer satisfaction.

Retail & Omni-Channel Logistics

MD Logistics client shared facilities manage high-volume, high-value, marketdriven, retail-sensitive products for industries



OGISTICS Customized Supply Chain Solutions

that expect maximum performance and flexible infrastructure. We handle B2B and e-commerce distribution, supporting the top 100 retailers in the country. Our tier one WMS fully integrates with our customers' ERP software and supports electronic data interchange for order management and reporting. By combining a wide array of custom solutions, the MDL team manages your supply chain from start to finish.

Transportation Services

Beyond traditional warehousing and distribution services, MD Logistics offers freight management, global freight forwarding and brokerage services. Our Indianapolis and Reno facilities are both located near International airports and within a day's drive of over 80% of the US population. We are strategically positioned to offer customers a range of all-inclusive transportation services and optimize their transportation budgets.











Matthew Telesca President & CEO

Mission statement: To provide the industry's most innovative Transportation Management Software through technology and dedication, thereby helping businesses efficiently manage their supply chain.



MGN Logistics Contact information: Bob Gormas Vice President of Managed Solutions 484-635-9296 b.gormas@mgnlogistics.com www.mgnlogistics.com





MGN Logistics is a leading provider of IT solutions for the freight management and transportation industry. Their Transportation Management Software or TMS platform has been the backbone of some of the country's largest 3PLs for many years. Now, this innovative technology is being made available to individual companies to assist in improving operational efficiencies.

MGN's cloud-based TMS supports all modes of transportation including Truckload, LTL, Ocean, Air, Rail, Intermodal and Parcel, providing customers with a powerful, yet easy-to-use, single platform for their entire supply chain. An early pioneer of webbased transportation management solutions, MGN's innovative and proprietary TMS was designed by transportation professionals with real-world experience.

Whether you are looking for a simple rate comparison or a complex, fully managed supply chain solution, MGN Logistics' stateof-the-art, NextGen platform has what you need. Their cloud-based TMS offers seamless integration into existing Enterprise Resource Planning (ERP) and Warehouse Management Systems (WMS) or can be implemented as a stand-alone solution. Services include mode and carrier selection, rate optimization, automated tracking and tracing, including GPS, freight bill auditing and payment, along with business intelligence, blockchain, artificial intelligence and sophisticated analytical tools. MGN provides the highest level of consulting intelligence coupled with technology to implement best practices, compliance, and auditing to maximize all available opportunities for improvement. Some of the benefits MGN Logistics' customers experience from our solution include:

- Immediate cost reduction from carrier and mode optimization
- Full transparency into all shipment invoices
- Real-time visibility into any shipment metric
- Vendor shipment execution and compliance reporting
- Artificial Intelligence for optimization
- Blockchain enhanced data security
- Access to live market data

Are you tired of hearing about other companies' supply chain successes? Then join the growing number of businesses that are now taking control of their transportation spends. MGN Logistics has been recognized by *Inc. Magazine* five years in a row as one of the country's fastest growing private companies. Find out why some of the industry's smartest professionals have turned to MGN Logistics for their TMS solution.





MHI

George W. Prest CEO

MHI is an international trade association that has represented the industry since 1945. MHI members include material handling, logistics, and supply chain equipment and systems manufacturers, integrators, consultants, publishers, and thirdparty logistics providers. Much of the work of the industry is done within its product- and solutionspecific groups. The association also sponsors trade events, such as ProMat and MODEX, to showcase the products and services of its member companies and to educate industry professionals on the productivity solutions provided through material handling and logistics.

MHI

8720 Red Oak Blvd, Suite 201 Charlotte, NC 28217 704-676-1190 customerservice@mhi.org mhi.org



MODEX 2020

Power endless supply chain possibilities at MODEX 2020, where you'll find 950+ exhibits and 100+ education sessions tailored to help you discover equipment and system solutions for your material handling and supply chain needs. With keynotes, networking, education, and product booths, MODEX is where manufacturing and supply chain innovation comes to life-in person and in action. Experience all the providers you could ever need as they demonstrate the latest equipment and systems that will power your possibilities, like:

- Improving visibility & accelerating time to market
- Reducing operating costs & increasing efficiency
- Streamlining & automating your operations
- Connecting with solution providers & key thought leaders
- Discovering the latest technologies & innovations
- Learning the latest trends in over 100 educational sessions

On March 9–12, manufacturing and supply chain professionals will have an unrivaled face-to-face opportunity to network, learn, share, and get a sneak preview of where our industry is headed.

IN-PERSON EXPERIENCES. OUTSTANDING RESULTS.

There's no substitute for meeting face-to-face and watching equipment and technology operate in real time. MODEX 2020 gives you the chance to do both. When you're here, you can connect with industry peers and solution providers to find what you need to move your business forward.

SET YOURSELF UP FOR FUTURE SUCCESS.

The future of the manufacturing and supply chain industry starts at MODEX. It's where the brightest minds in the industry gather to network, learn, and share. Get a sneak preview of where the industry is going and find the people, solutions, and resources you need to compete in an increasingly challenging marketplace.





EXPLORE GLOBAL OPPORTUNITIES.

MODEX is an international event with manufacturing and supply chain professionals attending from over 140 countries. To accommodate our international visitors, we offer special interpreting services, meeting rooms, and matchmaking tools to help you take full advantage of a global economy.

So whatever solutions you need to move your business forward, you'll find them all at MODEX 2020. Register today at modexshow.com and join us at Georgia World Congress Center in Atlanta.





Mitco Global Logistics



Kevin May CEO/President

MITCO GLOBAL LOGISTICS

A full-service asset-based third-party logistics company specializing in Gateway Solutions. For over 30 years, Mitco has helped companies bring their products to market.

MITCO MISSION

Provide adaptive and scalable global supply chain solutions designed to customers' needs by investing in people and technology.

MITCO VALUE

Mitco is a Managed Supply Chain Solutions company delivering through dynamic technology, commitment to customer value, and improved financial results.

Mitco Global Logistics 2302 B St NW #101 Auburn, WA 98001-1758

253-891-0600 sales@mitcoglobal.com pricing@mitcoglobal.com www.mitcoglobal.com



THE MITCO SOLUTION

The Challenges

Consumer behavior and the everchanging retail landscape require supply chains to evolve. Continuously balancing the needs of the customer with services and cost controls.

Speed to market and inventory visibility throughout the supply chain is critical through all logistics phases.

Demand is not static; flexibility and adaptability to balance speed and cost is a must. Static, one-size-fits-all solutions no longer meet today's requirements.

Why Mitco

Mitco delivers Managed Global Solutions designed to proactively manage all segments of your supply chain, developed to your requirements and KPI's. We integrate solutions across all segments of the supply chain, providing a single-source solution.

At the core of Mitco solutions: People, Technology, and Assets. Investing in these critical components, providing 3PL solutions specific to your business, to meet your customer demand and service levels.

The Mitco Solution

Beginning at origin of goods, domestic, or offshore, we integrate your inbound data into our systems. Programmatic tracking provides updates and the ability to react proactively.

Regional DCs provide crossdock, warehousing, and fulfillment for both B2B and B2C markets. We manage at PO, item level, and shipment level. Our interactive systems allow for in-transit changes supporting customer demand changes.

Final mile: Our team is focused on meeting "must deliver by" dates and retail compliance. Our TMS provides the ability to evaluate cost and speed to align with customers' requirements. Monitoring shipments in transit, we react and communicate when issues arise...not when you call to ask why it didn't deliver on time!



The Results



Visibility. On the water, on a truck, through our warehouse or delivery to your door, visibility to inventory from a single portal. Tracking by Item, PO, or Shipment ID.

Operational Performance. Assets, expertise and documented SLAs with real-time performance reporting provides the ability to measure results on demand.



Flexibility. Our interactive portal and dedicated customer service allow you to prioritize items, POs, and shipments through all segments of the supply chain.



Costs. By moving to a single-source solution and with services designed to your needs, the Mitco solution can deliver a lower Total Landed Cost.

Mitco operates as an extension of your company. Our success is only defined by your success. Delivering efficiencies, lower cost to serve, and customer satisfaction is our priority.

CORE SERVICES

DRAYAGE WAREHOUSING FULFILLMENT TRANSLOADING TRANSPORTATION





North Carolina State Ports Authority



Paul J. Cozza Executive Director

Mission Statement

The mission of the North Carolina State Ports Authority is to enhance the economy of the State of North Carolina. The Ports Authority will be managed like a business, focused on the requirements of its customers. North Carolina's Ports are recognized for selfsustaining operations, environmental stewardship, highly efficient workforce, satisfied customers, and modern. well-maintained facilities and equipment.

North Carolina State Ports Authority

2202 Burnett Boulevard P.O. Box 9002 Wilmington, NC 28402

> Customer Service 800-334-0682

customerservice@ ncports.com www.ncports.com





North Carolina Ports has convenient locations in Wilmington and Morehead City, plus an inland port in Charlotte. Our customer-focused approach offers shippers excellent port communication and customized service.

If you're not yet working with NC Ports, here are our top 10 reasons why you should consider doing so:

- 1. We're **customer-focused**, with limited red tape that aids our commitment to helping new customers transition.
- 2. We've got **less congestion** than other East Coast ports. Some may be larger, but they're often MUCH busier.
- 3. We're equipped to handle **ultra-large container vessels**, thanks to our harbor enhancements and three neo-Panamax container cranes.
- 4. Our turnaround times are quicker than those of other ports. In fact, we've got the **fastest turn times on the East Coast.**
- 5. Our carriers do business **all over the world**, calling on ports in Asia, Europe, Africa and Latin America.
- Our rates are very competitive, usually resulting in **cost savings** for you (and your customers, if that applies).
- We've got room for growth that will be tailored to the specific needs of our customers. If you need an accommodation, there's a good chance we can make it happen.

- Our strategic plan is business-friendly, with the goal of providing you with a competitive advantage and more opportunity for profitability. We want to be your best business decision.
- 9. Our infrastructure investment is designed to meet future industry needs, with some projects already done and more on the way. Recently, we added a new, 101,000-square-foot, on-terminal cold storage facility that can accommodate more customers than ever. And we're working to double the annual throughput capacity at the Port of Wilmington to more than one million TEUs and triple our on-terminal refrigerated container capacity.
- 10. **Our location is second to none,** with easy access to interstate highways and major railroads. North Carolina's ports are within 700 miles of 70 percent of the U.S. industrial base.

To learn more about how your business can benefit by working with North Carolina Ports, visit ncports.com.





The Northwest Seaport Alliance



John Wolfe *Chief Executive Officer*

About The Northwest Seaport Alliance

The ports of Seattle and Tacoma (Washington State, USA) unified management of their marine cargo facilities in August 2015. The alliance is a port development authority governed by the two ports as equal members, with each port acting through its elected commissioners.

> The Northwest Seaport Alliance P.O. Box 2985

Tacoma, WA 98401 Phone: (800) 657-9808 info@nwseaportalliance.com nwseaportalliance.com





The Northwest Seaport Alliance (NWSA) brings together two of the nation's premier harbors to form a single, integrated gateway for marine cargo. Our combined terminal facilities, carriers and ports of call provide unlimited options and flexibility to suit your unique supply chain needs.

We are one of the largest container load centers in North America. Strategically located in the northwest corner of the U.S., we offer shorter transits from Asia, and are the first and last ports of call for many Trans-Pacific liner services. We are also a major gateway to Alaska and Hawaii; more than 80% of trade between Alaska and the lower 48 states moves through our harbors. In addition to containers, we are also a center for bulk, breakbulk and project/ heavy-lift cargoes, and automobiles.

Make better connections

Shorter transit times from Asia make The Northwest Seaport Alliance the natural port of choice for time-sensitive container cargo headed to the Midwest, Ohio Valley and the East Coast.

Our on-dock rail, international and domestic rail service options from two Class 1 railroads along with near-terminal transload warehouse facilities offer plenty of options and the flexibility to move cargo how and when you want. Our close proximity to the 2nd largest concentration of warehousing on the U.S. West Coast also makes us an ideal location for warehousing, distribution, and transload operations. We pride ourselves on being proactive and performance-driven, and put unrelenting focus on delivering operational excellence and best-in-class service for our customers. And our commitment to working handin-hand with our supply chain partners to provide cost-effective, innovative shipping solutions is unparalleled. At the end of the day, it's all about helping you, the shipper, get the job done.

Make our competitive advantages yours:







Luther M. Brown Founder & CEO

nVision Global World Headquarters

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Central America Office

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European Office

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J-2, 2nd Floor, Block EP & GP Sector-V, Salt Lake Kolkata, West Bengal 700091 Phone: +91.33.2357.6571

B-1/A-12, Mohan Co-operative Industrial Area New Delhi, India 110044 Phone +91.11.4150.4442



nVision Global provides configurable technology solutions, enabling shippers around the world to optimize their transportation management and gain access to critical data. From our roots as a North American freight audit & payment provider, we now offer a full suite of logistics services that allows for end-toend shipment visibility.

We possess more than 25 years of expertise in Freight Audit and Payment, Data Normalization, Claims Processing, Freight Rate Procurement and Management, Spot Quote/Auction Platform and Best in Class Business Intelligence and Analytics, all of which are located within our Impact Transportation Management System.

Customers rely on our modular software solutions to provide the visibility and data that they need to increase efficiencies and reduce overall transportation costs.

While each customer has similar issues, every customer is different! We provide configurable solutions that meet every customer's needs because our solutions are robust enough to address global issues but flexible enough to fit into your environment. Unlike our competitors, we tailor our solution to fit your needs; not the other way around.

nVision Global Highlights include:

- Global Single Source Solution
- Industry Leading Analytical Tools
- Multi-Lingual Staff
- Process Invoices From Over 198 Countries
- Experts in Processing all Transport Modes
- Six Sigma Methodology

Core Services include:

Global Freight Audit/Payment

- Single Global Platform
- 120 Standard Data Elements Captured
- Utilize Latest Imaging Technology
- Experts in Complex Account Coding
- On-Demand Closings
- Non-Commingled Payments
- Online Exception Management
- Global Support & Services Teams
- Sarbanes-Oxley Compliant
- Automated Match Pay Processing

nVision Global



Business Intelligence/Information Management

- Industry Leading Analytics Dashboard
- Global Mapping, Graphing
- Ad-hoc Reporting
- Least Cost Carrier Applications
- Single Source Data Warehouse
- Key Performance Indicator Development

Claims Management

- Loss & Damage Claims Processing
- Overcharge Claims Processing
- Service Failure Claims Processing
- nVision Global Managed or Self Service (Offered as a Software - SAAS)
- 87% Collection Rate
- Over 40 Years of Combined Experience

Freight Rate Procurement

- Online Procurement Software that Manages the Entire Procurement Project
- Transport Providers Submit Bids Online

Contract Management

- Online Management Portal
- Rate Approval & Imaging Process
- Rate Expiration Notifications
- Storage of Expired and Current Rates
- Standardized Pricing Templates Available

Transportation Management System (TMS)

- Global Freight Auto Rate and Auto Tender
- Shipment Tracking & Visibility
- Benchmarking
- Vendor Compliance Reporting
- EDI Compatible
- Vendor & PO Integration
- Shipment Creation & Rating
- Shipment Spot Bid & Approval
- Shipment Tender/Booking
- Shipment Visibility



Odyssey

Odyssey Logistics & Technology Corporation



Robert H. Shellman President and CEO

Innovating Logistics, One Route at a Time

There are lots of ways to get from Point A to Point B, but there's only one optimal way. For your business to maximize its profit, you need to avoid weather disruptions, labor shortages, price increases and countless other inefficiencies.

Odyssey Logistics specializes in complex logistics, creating customtailored solutions across multiple transportation modes. Door-to-Done® is not just our commitment to ensure the timing, safety and integrity of your shipment from the moment it leaves your facility all the way through to final delivery, it is our assurance that our worldclass logistics experts will manage the entire process, from request to receipt.



Odyssey Logistics & Technology Corporation 39 Old Ridgebury Road Danbury, CT 06810 866-487-7481 odysseylogistics.com salesandmarketing@ odysseylogistics.com





Odyssey's deep expertise, leading technology and extensive network provide clients with best-in-class logistics solutions

Organizations with diverse and complex transportation needs rely on Odyssey's innovative technologies to deliver thorough, high-value logistics strategies. Our clients benefit from expert tailored solutions across multiple transportation modes, backed by the power of our freight network exceeding \$3B globally.

At Odyssey, we have assembled a diverse **portfolio of solutions** that we make available to our clients in multiple ways, including:

Managed Logistics Services: With our experience and vast supplier network, our transportation management services clients know we will strategically manage their logistics operations, from the routine to the most complex and challenging, regardless of cargo size, class or destination.

Intermodal Services: Odyssey is a leader in intermodal metals transportation and is an expert in intermodal ISO tank movement for products that require special handling including chemicals and food grade liquids. We are the largest independent logistics company in ocean container transportation, servicing all the major ports across the country.

International Services: Our customers rely on our comprehensive knowledge of import and export processes and regulations that enables us to design custom, cost-effective, end-to-end international transportation solutions for any size load.

Specialized Truck Services: From small less-than-truckload (LTL) going a short distance to large truckloads (TL) moving across the country, we find our customers the capacity they need.

Advanced Technology Solutions: Through WIN, we offer a cost-effective transportation management web tool that has a scope that reaches beyond common TMS offerings. Operating through the Odyssey Logistics Global PlatformSM it brings the scale, efficiency and savings of the Odyssey carrier network directly to the client.





Old Dominion Freight Line, Inc.



Greg Gantt President and CEO

Vision Statement:

To be the premier transportation solutions company in domestic and global markets served.

Mission Statement:

To provide innovative solutions designed to exceed customer expectations, increase shareholder value and ensure the continued success of the OD Company and our family of employees.

Old Dominion Freight Line, Inc. 500 Old Dominion Way

Thomasville, NC 27360 800-235-5569 customer.service@odfl.com www.odfl.com





Id Dominion Freight Line, Inc. (Nasdaq: ODFL) is a leading, less-than-truckload ("LTL"), union-free motor carrier providing regional, inter-regional and national LTL services through a single integrated organization. Our service offerings, which include expedited transportation, are provided through a network of more than 236 service centers located throughout the continental United States. Through strategic alliances, the Company also provides LTL services globally. In addition to its core LTL services, the Company offers a range of value-added services including container drayage, truckload brokerage and supply chain consulting. For 86 years, Old Dominion has been Helping the World Keep Promises[®].

Recently, Old Dominion was recognized with the following acknowledgments for company leadership in the industry:

- Mastio & Company, a global B2B research and consulting firm, ranked Old Dominion as the No. 1 National LTL carrier for an unprecedented tenth consecutive year. On top of being named the Top Value among national LTL carriers, OD ranked #1 in 33 of 35 attributes most important to logistics and LTL industry decision makers.
- The U.S. Environmental Protection Agency recognized Old Dominion as a leader in freight supply chain environmental performance and energy efficiency for a fifth consecutive year.

- Logistics Management recognized Old Dominion with the Quest for Quality award as Top Multi-Regional LTL carrier for the tenth consecutive year.
- Inbound Logistics recognized the company as a 75 Green Supply Chain Partner (G75) for the tenth consecutive year as well as a Top 100 Trucker for the eighth year in a row.
- Forbes recognized Old Dominion as an employer of choice on three rankings in 2019: America's Best Large Employers List, America's Best Employers List, and America's Best-in-State Employers List. Forbes worked with Statista by surveying tens of thousands of working Americans.

For more information about Old Dominion, visit odfl.com or call 800-235-5569.





PCF, Inc.



Michael Giordana Executive Vice President

Our Mission

We aren't the biggest last-mile parcel delivery provider and that is not a bad thing. In fact, it brings a lot of advantages, such as being nimble, responsive and easy to work with, especially in our dense and desirable Northeast territory. We answer to our clients. not a board of directors. My family started this business on a philosophy of fair, firm and friendly partnerships, which continues to this day. The last-mile/parcel delivery environment continues to evolve rapidly, and our goal is simple: to take complexity—and pain—out of the equation.



PCF, Inc. 502 Washington Ave. Towson, MD 21204 877-PCF-6668 info@pcfcorp.com pcfcorp.com





PARCEL DELIVERY MADE EASY.

PCF is a logistics service provider focused on the last-mile delivery needs of the high-density, high-pressure Northeast region. Every day we work to earn your trust and provide value, making it easy and affordable to do business with us.

With over 40 warehouse facilities, a tenured team of distribution experts and a vast network of delivery providers, we've built a reputation for getting it right or making it right every day — accurately, safely and on time. Plus, people like doing business with us and so will you — no bull.

Northeast Know-How

We've got four decades' experience delivering every day in the cities and suburbs of the Northeast. We know the roads, the shortcuts, the workarounds and the customers. Our footprint covers southern New Jersey up through southern New Hampshire, a swath that includes over 11 million households. We've got hubs strategically located in Massachusetts and New Jersey and our network of couriers are on the road everyday — 7/365. After billions of Northeast deliveries, we can say we've seen it all and we're undaunted.

The Earlier, The Better

We built our business on early morning demand, which gives you an

affordable edge to have your customers' packages there, usually by 8AM. We do it all — early morning as well as standard day-side — while offering flexible transportation solutions, state-of-the-art tracking, verification and visibility every step of the way.

Deliberately Affordable

Satisfying Northeast customers is demanding. You need a partner who's got the technology to keep costs in check and an approach that is straightforward and easy. When it comes to pricing and accessorial charges, "nickel and diming" is not our thing. We take a streamlined approach, limiting and reducing accessorial fees to keep things simple. For example, we don't believe residential or delivery area surcharges are appropriate, because we're already in those neighborhoods, nor should you pay a lot extra for morning delivery, simply because it's early.

Call us today to learn how easy it is to partner with PCF, and how our simple approach to pricing and our ability to deliver on time can lead to better performance.

LET'S GET GOING. CALL 1-877-PCF-6668 OR VISIT PCFCORP.COM



Penske Logistics





Marc Althen President

Products and Services

- Dedicated Contract Carriage
- Distribution Center Management
- Transportation Management
- Lead Logistics
- Freight Management
- Freight Brokerage



Penske Logistics engineers supply chain and logistics solutions that deliver powerful business results for market-leading companies. Through its design, planning, and execution, Penske gives you the confidence to move forward by boosting efficiency and driving down costs in your supply chain.

Industry-specific expertise

Our experts work with the world's leading companies across industries, from automotive and healthcare to food and beverage and retail. We offer specialized solutions tailored to your operations, production and market demands. Penske Logistics can help you:

- Ensure efficiency within your supply chain using smart technology
- Improve the product development cycle for a successful launch
- Drive dynamic supply chain solutions
- Achieve record savings

Our technical capabilities, depth of experience and practical creativity have been recognized by both our customers and the industries we serve, and our people deliver the results you need to succeed every day.

Innovative thinking

As a recognized industry thought leader, our award-winning teams bring fresh

thinking to benefit you and your business. By tapping into our knowledge and knowhow, you can start driving innovation that produces real value.

To keep ourselves and our customers on the cutting edge of industry trends and information, we partner with leading organizations such as the Council of Supply Chain Management Professionals, and sponsor well-respected longitudinal studies from top supply chain researchers at Penn State University.

Global capabilities

Penske Logistics has extensive experience successfully establishing operations in new territories and a proven ability to transfer knowledge across geographies and cultures. With offices in North America, South America, Europe, and Asia, we're committed to serving our customers anywhere, meeting the needs of suppliers, manufacturers and retailers around the globe.

That's how we deliver confidence. Let us show you how our winning strategies can work for you. Call 844-868-0818 or visit us online at penskelogistics.com today.



Penske Logistics Worldwide Headquarters Route 10 Green Hills Reading, PA 19603 844-868-0818 www.penskelogistics.com







Craig Kaplan CEO

Our focus has always been on building partnerships through leveraging our expertise, human capital, technology, and integrity.







Performance Team 2240 E Maple Ave. El Segundo, CA 90245 866-755-5120 x 6975

www.performanceteam.net

Cliff Katab, President marketing@ performanceteam.net

Locations

Los Angeles/Long Beach/ Inland Empire Northern California New York/New Jersey Dallas-Fort Worth Miami, FL Louisville, KY Shreveport, LA Charleston, SC



or over 30 years, Performance Team has been a logistics leader in providing retail and manufacturing industries with end-to-end supply chain services. Through our domestic hub network, more than 9 million square feet of warehouse space, and 500 plus trucks, Performance Team processes, distributes, and transports over \$150 billion in wholesale goods annually. We've worked hard to earn and maintain a reputation as one of the leading e-commerce, distribution, trucking, and consolidation companies in the U.S. Here are a few ways we can help serve you and your customers more efficiently.

E-Commerce Fulfillment & Distribution

Whether e-commerce, omnichannel, reverse logistics, pick-and-pack, transload, or carton-in carton-out, we have distribution solutions to meet your most basic or complex needs. PT has the infrastructure, material handling equipment, information technology, and management expertise to handle any task. We are proficient at adding flex space and human resources to adjust to your seasonal demands. Talk to us about how you can eliminate the need for costly real estate investments, construction and equipment, labor management and technology purchases. As your business expands and requires additional space or more sophisticated solutions, Performance Team will rise to the challenge to not only meet but exceed your strategic distribution needs.

Transportation

Our customers compete in fast-paced retail and manufacturing industries, demanding precise, accurate and informed transportation services. Performance Team has the skills and technology to support those time-sensitive requirements. No matter how difficult the mission, from drayage, store delivery, local pick-up, consolidation, and delivery to distribution facilities and stores, PT is ready to step up to the plate and make a difference for your company.

Supply Chain Consulting

For Performance Team, logistics means strategy, execution, and integrity. Our extensive experience in supply chain

Performance Team



CONSOLIDATION/DECONSOLIDATION | CROSS DOCK | WAREHOUSING & DISTRIBUTION | E-COMMERCE FULFILLMENT | CFS/FTZ | PICK AND PACK TRANSPORTATION | RETAIL STORE DELIVERY | EDI/INTERFACE SERVICES

consulting enables us to analyze your business and devise custom, effective, and flexible solutions to optimize the movement, handling, and distribution of your goods. Our logistics expertise can help you craft robust growth-oriented distribution networks, increasing your return on assets while managing overhead, without losing sight of your goal—giving you and your customers the best service available.

Technology

Performance Team utilizes best-in-class technology to streamline and improve the movement and visibility of your products. Our WMS and TMS systems are integrated with our customers' ERP systems and provide real-time updates and reporting 24/7. This is handled through sophisticated enterprise application integration tools, utilizing well-understood EDI and API standards or proprietary interfaces as our customers require. Our API integration with Shopify and Magento enables seamless e-commerce integration.



PERFORMANCE TEAM



Pharr International Bridge

Investing Big for Faster Trade



Luis A. Bazán Bridge Director

The Pharr International Bridge allows for safe, orderly and efficient crossings for commercial and noncommercial vehicles. We do this by proactively implementing local, state and federal policies and procedures, coordinating bilateral efforts with government agencies, trade associations and businesses in the U.S. and Mexico. We deliver on our commitment striving for excellence in logistics by offering the fastest full-service commercial crossing in the South Texas region.





Pharr International Bridge 9900 S. Cage Blvd. Pharr, TX 78577 956-402-4660 pharrbridge@pharr-tx.gov www.pharrbridge.com



he Pharr-Reynosa International Bridge serves as one of the most important commercial ports of entry for the U.S.-Mexico border. Pharr now ranks 3rd in the nation for trade with Mexico, behind only Laredo and El Paso, and currently ranks as the 7th largest border crossing in the U.S. in terms of value for imports and exports.

Over 120,000 commercial trucks cross north and south through the Pharr Bridge on a monthly basis. These shipments consist of the following goods and commodities:

Top 5 Exports

- No.1 Petroleum gases and other gaseous hydrocarbons
- **No. 2** Motor vehicle parts
- No. 3 TVs and computer monitors
- No. 4 Computer chips
- No. 5 Gasoline and other fuels

Top 5 Imports

- No. 1 TVs and computer monitors
- No. 2 Avocados, dates, figs, and pineapples
- No. 3 Electrical boards, panels and switches
- **No. 4** Motor vehicle parts
- No. 5 Insulated wire and cable

The Pharr Port of Entry plays an important logistics role in the global economy with direct connectivity to freight corridors through land, air and sea. The Pharr Bridge's strategic location, surrounding infrastructure, services and potential for future investment and growth, give a competitive advantage to the City of Pharr, as well as, the City of Reynosa and the rest of the Southern Texas-Northern Mexico border region.

New infrastructure projects and process improvements inside the U.S. port of entry, as well as in Mexico, will augment the current facilities and streamline the cargo inspection process, allowing for increased truck throughput and reduction of wait times for maximum efficiency. By 2021, the City of Pharr will invest over \$35 million in infrastructure improvements. These enhancements, along with the new freight access road and dedicated lanes for F.A.S.T. cargo and empties to Mexico customs, as well as the recently completed construction



Future view 2021 after Pharr invests over \$35 million in port improvements

of the \$90 million modernized "Aduana" in Reynosa, will benefit trade and foreign investments in the years ahead. Importers, exporters, domestic and multinational manufacturing companies have found that using the Pharr-Reynosa International Bridge as the preferred port of entry is a strategic advantage to conduct their operations, as it has transformed into profits due to the region's low cost of doing business and its direct distribution access to clients and consumers.

Pharr's steadfast approach to positioning itself as one of the top leading bridges in the nation will be even more pronounced once process improvements, such as Unified Cargo Processing (UCP), are implemented in 2020. By monitoring trends in the manufacturing industry, perishables industry, the automotive and energy sectors, Pharr is poised for unparalleled growth.

With over \$35 billion in global trade, the Pharr Bridge continues to break import and export records by consistently registering 6% growth in imports and 5% growth in exports in the last few years. We're investing big for faster trade. Come grow with us. We are the Pharr International Bridge...Your Connection. Your Business. Your Bridge.



Phoenix Logistics



Robert Kriewaldt Senior Vice President

Mission Statement

At Phoenix Logistics, customer satisfaction is always our first priority. Our team is dedicated to providing end-to-end supply chain solutions for our partners by combining our strategic national footprint of industrial real estate with substantial investments in state-of-the-art logistics technology.

We understand that our customers need warehouse capacity and supply chain management services at affordable rates. We specialize in renovating undervalued or distressed properties to create costeffective storage and distribution options that serve a broad range of primary and secondary markets.



PHOENIX LOGISTICS

Phoenix Logistics 401 E. Kilbourn Ave. #201 Milwaukee, WI 53202 414-253-8010 Info@Phoenix3PL.com www.Phoenix3PL.com





Phoenix Logistics is an affiliate of Phoenix Investors, a well-known industrial real estate firm that has been in operation since 1994. Based in Milwaukee, Wisconsin, we provide a broad range of logistics solutions that are tailored to meet the unique needs of each customer.

We operate on principles of continuous operational improvement and aggressive technology investment, ensuring that we can always provide the most advanced endto-end supply chain support to our clients, including:

■ **Real estate.** Warehousing capacity in the United States is tighter than ever before. Shippers need to pair up with logistics partners who offer creative and effective solutions for reaching key markets. In conjunction with our affiliate Phoenix Investors, we maintain approximately 30 million square feet of industrial, retail, and office space spanning 22 states. We are constantly expanding this footprint by restoring underutilized properties for industrial use.

■ Transportation management. From freight brokerage to vendor management, we can operate as a lead logistics partner to help you optimize all inbound and outbound shipments at your facility. Our extensive network of carrier partners enables us to offer highly competitive rates on shipments ranging from raw materials to finished goods. ■ Distribution and fulfillment. Our experienced staff will help you build, operate, and maintain an efficient and costeffective distribution network powered by advanced warehouse management systems and other supply chain technologies that reduce costs, eliminate operational waste, and optimize labor.

■ **Big data.** Through advanced WMS, EDI, transportation and distribution management solutions, and much more, Phoenix is focused on offering logistics solutions driven by informed decisionmaking. We will help you analyze your pool of data to identify pain points and risks, then help you create realistic plans to optimize your supply chain.

■ Acquisitions. Phoenix Logistics and Phoenix Investors have an established history of making fair deals that benefit the seller. If we purchase your real estate assets or your entire logistics business, you can rest assured that we will continue to invest in the acquisition and make a positive impact in the community surrounding it.

Logistical support spans these functions and more, so it's critical to find a 3PL that can identify and implement the best possible solutions for your operation. The team at Phoenix Logistics is ready to help.



Pierbridge



Bob Malley Managing Director

First-mile to Last-mile Shipping Technology that Solves Global-to-Local eCommerce Parcel Shipping Challenges



hy do thousands of shippers, developers, and logistics service providers trust Pierbridge technology to process millions of packages every year? Because we know shipping. Our customers and partners count on Pierbridge's expertise, technology, and unwavering support to roll out powerful shipping solutions across their supply chains. It's no wonder Transtream has helped our technology partners achieve the highest FedEx, UPS, and USPS certification levels. We deliver.

What makes us different?

Enterprise Class: Our enterprise shipping platform, Transtream, is built on a service-oriented architecture (SOA) that provides IT professionals with the controls and analytics they need to manage and monitor user permissions, security, and connections to hundreds of parcel and freight services worldwide. Whether you are a retailer onboarding thousands of users across hundreds of fulfillment centers, offices, and store locations globally, or a multi-national financial services company managing tens of thousands of desktops, or a 3PL supporting a shipper community, Transtream gives you the automation and transportation cost-savings tools you need to succeed

Scalability: Transtream can be deployed on premise, accessed from our cloud, or implemented in a hybrid environment. Our APIs enable developers to augment their solutions with cartonization, rating, shipping, tracking, returns, and other transportation execution capabilities with sub-second response times. Transtream is resilient and responsive, ensuring high availability.

Flexibility: Our Composer UI design studio tools enable administrators to modify and adapt Transtream apps to rolespecific processes across the enterprise. Configure business rules to control processes by location, user, or user group. Then modify or create new apps as business requirements change.

Connectivity: Transtream's unique Internet of Things (IoT) tool, HubCapp, makes it easy to securely connect in real time to on-premise data sources and devices (such as scales, thermal label printers, conveyors, and cameras) from the cloud. Developers can also use HubCapp to quickly embed interactive plug-andplay rating, shipping, tracking, and returns "widgets" within their websites or apps.

Experience: Pierbridge's executive team has led the parcel software industry for over 25 years, introducing innovation after innovation that have transformed the way businesses ship. We have a passion for helping customers and partners turn complex problems into simple solutions.

pierbridge WISETECH GLOBAL GROUP

Pierbridge

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ΡΙΤΤ ΟΗΙΟ



Charles L. Hammel III President/Owner

Customer Driven

We strive to understand the diverse and emerging needs of our customer base. We provide reliable and dependable solutions that exceed our customers' expectations.

People Driven

We know that our most significant resource is our people. The success of our organization can be attributed to our employees' dedication, pride, and outstanding work ethic. The commitment and loyalty of our employees facilitates the success of our organization.

Quality Driven

We recognize that quality is important to our customers. We develop repeatable operations, safety, security, claims prevention and vehicle maintenance processes that minimize variance and improve consistency. We are committed to providing our customers with high-value, cost-efficient solutions. Our commitment to quality is integral to our company.

PITT OHIO 15 27th Street Pittsburgh, PA 15222

800-366-7488 cacybator@pittohio.com www.pittohio.com





S tanding by our signature commitment, we work diligently behind the scenes to help you solve your supply chain problems. Focused on logistics, our process starts with a complete understanding of our customer's needs and our flexibility makes it possible to integrate customized solutions that exceed your expectations. Through technology, we drive simplicity for your supply chain.

In our 40 years, we have strongly believed in continuous improvement, innovation to improve service and accessibility, and sustainable growth. At the core is our commitment to deliver quality service day in and day out.

Technology is dominating logistics, which can add great efficiency to the supply chain. We are making the right investments to give our customers the tools they need to be more efficient, gain visibility and ultimately digitize their supply chain. By using big data and our forward-thinking approach, we are finding various advanced solutions helpful in streamlining the data our customers need to advance their digital supply chain. Quality is one of our basic core principles. But it's not basic in execution. Our commitment to quality is integral to every part of our business and in every area of our company. Quality for us also means that we are ethical in our operations and maintain a distinct level of confidence with our customers. We are the carrier you can trust; a carrier with a flexible approach who can anticipate your needs.

Bring us your logistical challenges. It is likely we have the solution or we will use our creativity and years of experience to shape a solution for you. Ultimately, we listen to our customers and take actionable steps to make doing business with PITT OHIO easy. Whatever that may mean to you, whatever you require to make your day easier, PITT OHIO is the carrier listening to your needs and responding with solutions and innovation to improve the efficiency of your supply chain.

PITT OHIO provides SUPPLY CHAIN, LTL, Expedite, Protect From Freeze, and TRUCKLOAD solutions in the Mid-Atlantic, Midwest and New England States, and across all of North America.





Polaris Transportation Group

Mission

Founded in 1994. Polaris **Transportation Group** fosters a culture of mentorship and support for existing and future employees. In so doing we will create a customer experience unique to the transportation industry and we will continue to invest in the people and organizations that join our family of companies. We will support and recognize our social, cultural and environmental responsibilities to the communities we serve. Our reputation will be one of respect as an undisputed leader in our field and our company chosen over others as a trusted supplier and partner in the transportation industry.



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or over 25 years, Polaris Transportation Group has been an award winning carrier of choice for Fortune 500 companies, 3PLs, global freight forwarders and small to medium size businesses alike. The Polaris Transportation Group is comprised of five operating divisions that are not only leading providers of cross-border LTL but of global logistics, transport, technology and hazmat certified warehousing. With the recent development of their in-house digital laboratory Polaris is at the cutting edge of technological innovation in the supply chain sector. A snapshot of their individual service strengths as follows:

Polaris Transportation is the largest independently Canadian owned, cross border LTL carrier. They specialize in the shipment of dry goods, price by the hundredweight or by the skid and deliver industry leading transit times between Canada and the USA. Polaris Priority Plus service offers guaranteed overnight service between Toronto and Boston, NYC, Chicago, Cleveland, Cincinnati & Columbus. Customer service is a top priority at Polaris, you can rest assured your shipments will be delivered according to their stringent quality process.

Polaris Motor Freight Inc. is the U.S. headquarters of Polaris Transportation's LTL cross border operation based in Cleveland, Ohio. They are a full truckload and LTL carrier in the northeast Ohio market and specialize in distribution of freight in Ohio's largest metropolitan area. Polaris offers overnight daily departures to/from Canada and the USA.

Polaris Global Logistics (PGL) investigates larger opportunities within their customers' supply chain. These solutions include global requirements where PGL acts as the critical link for the North American transportation and distribution segment. Within North America, they provide all modes of transport, warehousing, distribution and supply chain management services. They can effectively deliver to every zip and



postal code within Canada and the USA on a daily basis.

Polaris Commercial Warehousing facilities in Toronto, ON, can effectively distribute anywhere in Canada and the USA. From inbound shipment requirements, to picking and distribution of orders by courier, LTL or truckload carriers. Polaris two facilities offer sorting, display assembly, co-packing for e-commerce, fulfillment and distribution. Commodities handled include CPG, bulk, medical devices, paper, apparel, hazmat, industrial and commercial products. Polaris specializes in the warehousing of hazardous materials and their operational facility and personnel are compliant with all regulations and safety protocols required for the handling of dangerous goods. If you need a presence in Canada, Polaris's Toronto facilities serve as the ideal distribution hub.

NorthStar Digital Solutions (NDS) is

a cutting-edge technology company providing intelligent automation software. Through innovative technical design and development, along with foundational industry experience, their smart people, partners and technology platform have combined the very best ingredients for intelligent systems processing across enterprise platforms. Their team of automation engineers, architects, data scientists, developers and seasoned industry leaders can move at great speeds with unconstrained research and development facilities and platforms. NDS has successfully integrated blockchain hyperledger, robotic automation and smart contract processes. NDS touches all vertical market spaces with a specialization in transportation.



Port Everglades



Glenn A. Wiltshire Acting Chief Executive & Port Director

Port Everglades is Florida's powerhouse global gateway. A respected leader in trade, travel and financial stability, we create economic and social value by working in partnership with worldclass clients. We achieve advancements focusing on efficient facilities, trade and cruise expansion, jobs growth, safety, security and environmental stewardship for our customers, stakeholders and community.

Port Everglades

1850 Eller Drive Fort Lauderdale, FL 33316 954-523-3404 Toll-Free: 800-421-0188 porteverglades@ broward.org Porteverglades.net



Port Everglades, handling more than one-million TEUs annually, serves as a gateway to Latin America, the Caribbean and Europe. Intermodal connections through Florida East Coast Railway's 43-acre Intermodal Container Transfer Facility reach 80 percent of the U.S. population within four days.

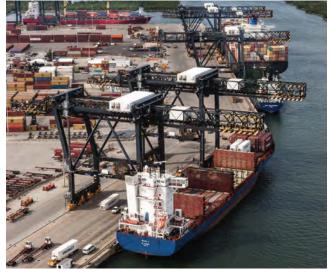
The Port's commitment to planning—both physical and financial—has made Port Everglades one of the top containerized cargo ports in the United States, one of the top three cruise ports in the world and the primary distribution fuel hub for all southern Florida. Currently there are more than \$1.6 billion in infrastructure improve

billion in infrastructure improvements on the books for the next 10 years.

New cargo berths and Super Post-Panamax gantry cranes are part of the \$471 million Southport Turning Notch expansion, the largest infrastructure project in the Port's history. The project allows for new cargo berths by lengthening the existing notch from 900 feet to 2,400 feet and installing crane rail infrastructure to handle new Super Post-Panamax gantry cranes.

Additionally, three custom-designed Super Post-Panamax gantry cranes are scheduled for delivery in the fall of 2020 to meet demands from current customers and new services anticipated from the Port's expansion program. The Port has an option to purchase an additional three cranes within the next five years.

A new logistics center is being constructed at the Port through a publicprivate partnership with CenterPoint Properties. The Port Everglades International Logistics Center, constructed on 16.657 acres of Port property, will be divided into two buildings with the southernmost building (3145,000 SF) scheduled to be completed by June 2020, and the northernmost building (3156,000 SF) slated for September 2020. The project will contain warehouse, refrigerated warehouse, office space, and crossdocking facilities, which will enhance the services available to shippers using Port Everglades. The entire logistics center will be designated as a Foreign-Trade Zone.



To further enhance ship traffic at Port Everglades, the U.S. Army Corps of Engineers is moving forward with a progressive plan to deepen the Port's navigation channels from 42 feet to 48-50 feet and widen narrower sections of the channel for safe vessel passage.

Port Everglades follows an aggressive, comprehensive Master/Vision Plan that is updated every 2-4 years to reanalyze and update market trends, changes in the cruise, cargo shipping and petroleum industries, local planning initiatives and evolving technology to strategize for upcoming capital improvements. This in-depth analysis provides a projective, substantiated, marketdriven, environmentally sound, and phased roadmap for guiding cost-feasible capital investments over the next 20 years. During 2020, Port Everglades will unveil its most recent Master/Vision Plan Update which will include a 5-year Master Plan for the period fiscal years 2019 to 2023; the 10-year Vision Plan for the period fiscal years 2024 to 2028 and the 20-year Vision Plan for the period fiscal years 2029 to 2038.

As Port Everglades continues to advance major investments, all aimed at improving productivity, this South Florida powerhouse seaport is an ideal point of entry for international trade.







Robert Russo President & CEO

Port Jersey Logistics exists to empower the success of our People, our Customers and our Network. This is done by developing tailored logistics solutions through creating collaborative partnerships with our customers to ensure their expectations are exceeded so they can focus on their core business. This is achieved by dedicating ourselves to focusing on 4 key areas:

Relationships: Working together as trusted partners, openly sharing ideas and expectations. Teamwork: Recognizing, respecting & aligning our goals with the goals of each stakeholder. Productivity: Continuous process improvement by working together to assess, plan, execute and then re-develop solutions for improved efficiency. Culture/Ethics: Following the Golden Rule to operate with the highest level of integrity and respect.



Port Jersey Logistics 200 Liberty Way Cranbury, NJ 08512 Tel: 800-355-1009 sales@portjersey.com www.portjersey.com



ort Jersey Logistics offers six decades of **3PL** experience providing comprehensive and integrated services that meet a broad range of logistics requirements. We build customized onestop solutions through our warehousing and transportation divisions, which cater to an array of products such as consumer packaged goods, specialty foods, food ingredients, health and personal care, alcoholic beverages, and more.

Distribution and Fulfillment

We provide warehousing, inventory management, and fulfillment through our public warehousing operation, Tyler Distribution Centers, Inc. and our contract warehousing operation, 21st Century Distribution Centers, Inc. All facilities are food grade, FDA registered, AIB approved with superior ratings, and USDA Organic Certified. Manufacturers, importers, exporters, distributors and retailers benefit from our focus on compliance and technology in developing solutions.

Value-Added Services

As a comprehensive solution, Tyler Distribution and 21st Century Distribution provide:

- Retailer compliance
- Vendor consolidation
- E-commerce fulfillment
- Secondary packaging and assembly
- Shippers/point-of-purchase displays
- Ink jet printing & heat shrink packaging
- Labeling and ticketing, pick & pack
- Inventory, shelf life, lot code management

We have the space, capacity flexibility and specialized capabilities to cover your warehousing and distribution requirements. An integrated Warehouse Management System (WMS) guides our ambient and temp-controlled warehousing operations, ensuring accurate inventory visibility and order fulfillment. We have the resources to provide fast and effective dedicated solutions anywhere in the United States.

Port Jersey Logistics



Transportation Management

Our national transportation management and logistics services operation, Continental Logistics, Inc., provides customers the human and technological resources that coordinate all of the logistics prior to pickup and see everything through to ensure delivery.

A dedicated Logistics Coordinator, combined with our interconnected Transportation Management System (TMS), manages your domestic supply chain to get things done the right way, on time and on budget! Continental Logistics offers:

- Retailer Compliance
- Import / Export Drayage
- Less than Truckload (LTL) /Full Truckload (FTL) / Intermodal
- Project Management
- Cross-Dock Transportation
- Vendor Consolidations

Scalable, Customized Technology-Focused Solutions

Beyond warehousing and transportation, Port Jersey provides added value by developing solutions tailored to the needs of our clients—and their clients. We exceed customer expectations by integrating transportation and warehousing services with a focus on compliance and technology. Our warehousing and transportation operations are systemically integrated to make sharing information simple. Automated data flows through Electronic Data Interchange (EDI) and file sharing through File Transfer Protocols (FTPs) allowing our partners to focus on managing the business rather than being tied up by daily operations. We provide real-time web access to both our WMS and TMS systems and can customize and schedule reports when you need them.





Port of Galveston

Galveston Wharves at the Port of Galveston



The Port of Galveston is one of Texas' major seaports. It does not rely on any tax dollars for operations. The Port generates current annual operating revenues of approximately \$43.5 million, provides an annual estimated economic impact to the State of Texas of over \$2.1 billion, and generates approximately 14,000 jobs.

The Port of Galveston, a Landlord Port with facilities and property approximating 850 acres on Galveston Island and adjacent Pelican Island, facilitates the movement of a diverse mix of domestic and international cargoes that deliver value to the region and the state. Situated on the Gulf Intracoastal Waterway and the Interstate Highway System (I-45), the Port is also served by two major western Class 1 railroads, the BNSF Railway Company, and the Union Pacific Railroad. The Galveston Ship Channel has an authorized depth of and is maintained at 45 feet, with channel widths up to 1,200 feet. The Port serves the cargo, cruise, and offshore oil and gas industries simultaneously.

One of the top 50 ports in the nation and one of the busiest seaports in Texas, the Port moves an average of 4 million short tons of cargo each year. This includes export grain, fertilizer and other dry and liquid bulk products, wind turbine towers, blades, nacelles and other components, high and heavy cargoes, project cargoes, new, used and personally owned vehicles, agricultural machinery, construction equipment, and numerous other types of roll-on/roll-off cargoes, household goods, refrigerated fruit and produce, liner board, military cargo, and some containerized cargo. The Port maintains Roll-On/Roll-Off (Ro-Ro) terminal facilities in both the east and west end areas of the Port. currently serviced by 4 regular Ro-Ro shipping lines. They are Wallenius Wilhelmsen Logistics (WWL), American Roll-On Roll-Off Carrier (ARC), "K" Line, and ACL-Grimaldi Line. Nearly all of the Port's facilities have direct access to the Port's terminal railway services, Galveston Railroad, LP, which interchanges with the Class 1 railroads.

The Port of Galveston is also the Grantee for Foreign-Trade Zone (FTZ) No. 36, an Alternative Site Framework (ASF) Zone with activated sites located on Galveston Island Port facilities, Pelican Island, and other locations in Galveston County.



Galveston Wharves at the Port of Galveston

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Port of Long Beach



Mario Cordero Executive Director

Mission

The Port of Long Beach is an international gateway for the reliable, efficient and sustainable movement of goods for the benefit of our local and global economies.

Port of Long Beach

415 West Ocean Blvd. Long Beach, CA 90802 562-283-7750 trade@polb.com www.polb.com/trade





The Port of Long Beach is the premier U.S. gateway for trans-Pacific trade and a trailblazer in innovative goods movement, safety, environmental stewardship and sustainability. As the second-busiest container seaport in the United States, the Port handles trade valued at more than \$200 billion annually and supports 2.6 million trade-related jobs across the nation, including 575,000 in Southern California.

As the industry enters the "Big Ship Era," the Port of Long Beach is one of the few U.S. ports that can welcome today's largest vessels.

Founded in 1911, the Port serves 175 shipping lines with connections to 217 seaports around the world. Goods moving through the Port reach every U.S. congressional district.

The Port encompasses 3,200 acres with 31 miles of waterfront, 10 piers, 80 berths and 68 post-Panamax gantry cranes. In 2019, the Port handled 7.6 million container units.

Led by the five-member Board of Harbor Commissioners and Executive Director Mario Cordero, the Port is investing \$2 billion over the next decade in capital improvements to build the most modern, efficient and sustainable port facilities in the world. The improvements will allow the Port to welcome the largest ships and attract the trade that generates thousands of jobs in the region. The two largest projects are the replacement of the aging Gerald Desmond Bridge, budgeted at nearly \$1.5 billion, and the Middle Harbor Terminal Redevelopment Project at \$1.5 billion. Middle Harbor will be the most technologically advanced container terminal in North America, capable of moving more than three million container units annually while cutting air pollution by half from previous levels. The new landmark, cable-stayed bridge will be safer and provide better Port access than the current span.

The Port of Long Beach prides itself on its culture of customer service and the strong relationships it maintains with industry, community, environmental advocates and partner agencies. It has received many accolades for its operational excellence, and in 2019 was named the "Best West Coast Seaport in North America."





Port of Los Angeles



Gene Seroka Executive Director

The Port of Los Angeles encompasses 7,500 acres of land and water along 43 miles of waterfront. It features 27 passenger and cargo terminals, including automobile, breakbulk, container, dry and liquid bulk, and warehouse facilities that handle billions of dollars worth of cargo each year.

When measured by container throughput, the Port has consecutively ranked as the number one port in the nation for the last 15 years.



Port of Los Angeles 425 S. Palos Verdes St. PO Box 151 San Pedro, CA 90733-0151 Phone/TDD: 310-SEA-PORT www.portoflosangeles.org





he Port of Los Angeles—America's Port® and the premier gateway for international commerce—is located in San Pedro Bay, 20 miles south of downtown Los Angeles. This thriving seaport not only sustains its competitive edge with recordsetting cargo operations, but is also known for its groundbreaking environmental initiatives, progressive security measures, diverse recreational and educational facilities, and visitor-serving LA Waterfront.

The Port is currently increasing supply chain efficiencies by continuously exploring new technologies and creative ideas that support business competitiveness, environmental sustainability, security, and efficiency. The Port is working with supply chain partners to improve the efficiency of marine terminal, trucking, rail and vessel operations.

With an exceptional credit record, the Port maintains an Aa2 bond rating, the highest assigned to any seaport in the United States, operating without the benefit of taxpayer support. The Port also wields tremendous economic impact, generating employment for more than 3.3 million Americans nationwide. In California alone, nearly 1 million jobs are related to trade through the San Pedro Bay Port Complex. Facilitating global trade while protecting the environment is a delicate balance at the nation's largest trade gateway. To strike that balance, the Port of Los Angeles is leading the way internationally when it comes to reducing air emissions, improving water quality, modernizing facilities and cultivating the development of new technologies.

The aggressive clean air program at the Port of Los Angeles shows it has reduced pollutants up to 97% in the past 10 years, measured by a detailed inventory of emissions of key pollutants from ships, trucks, locomotives, cargo-handling equipment and small harbor craft. At least half of container, refrigerated and cruise ships calling at the Port are required to run their auxiliary engines on shore-based electricity, which eliminates significant emissions at berth.

Complementing its busy terminal operations with green alternatives, the Port of Los Angeles remains committed to managing resources and conducting Port developments and operations in both an environmentally and fiscally responsible manner.

The Port of Los Angeles: America's Port®.



The Port of New York and New Jersey



Sam Ruda Port Director Port Department Port Authority of NY & NJ

The Port of New York and New Jersev is the gateway to one of the world's most concentrated and affluent consumer markets. A system of terminals, rail, and roadways brings competitively priced goods to consumers' doorsteps and U.S.-produced exports to the world's buyers. We are the largest port on the U.S. East Coast, third largest in the United States and ranked in the 'Top 25 Ports' by the World Shipping Council (WSC).

The Port of New York and New Jersey

4 World Trade Center 150 Greenwich Street, 17th Floor New York, NY 10007 888-PORTNYNJ www.portnynj.com

Twitter & Instagram: @portnynj



he Port of New York and New Jersey is a pivotal gateway for international commerce. Six container terminals serve the world's largest vessels, offering access to 27 million consumers in the New York-New Jersey metropolitan area and 98 million more in markets within 250 miles of the port. Additional business lines include auto, cruise passenger, bulk and break bulk, marine highway and over 1 billion square footage of industrial warehousing. One-third of the country's GDP is also located within 250 miles

of the Port of New York and New Jersey.

Our goal is to move cargo quickly, cost efficiently, and in a way that's environmentally friendly. Our terminal operators have made several improvements, investing in Ultra Large Container Vessel (ULCV) gantry cranes, increasing reefer capacity, adding terminal handling equipment, modernizing gate systems, upgrading terminal software, building new gate systems, deepening berths, and upgrading berth infrastructure.

One of the port's most significant improvements, the raising of the roadbed of the Bayonne Bridge in 2017, allowed the world's largest ships to enter the port, spurring an unprecedented surge in cargo handling. In 2018, the Port of New York and New Jersey handled more than 7 million TEUs for the first time in its history, representing a year-over-year increase in cargo of nearly 7 percent. In 2018, the port handled one-third of all containers on the East Coast and moved cargo valued at more than \$200 billion.

With more than 75 percent of the vessels arriving in the Port of New York and New Jersey as their first call, our efficient rail cargo system can deliver cargo to an inland destination before the vessel reaches the next U.S. port.

In 2019, the completion of a \$600-million investment expanded rail capacity at our container terminals to more efficiently move



cargo bound for the country's interior. For shippers, ExpressRail offers opportunities to access an additional 98 million consumers in the Midwest, New England and Eastern Canada using two Class 1 railroads. The total capacity at the four rail terminals increased the port's capacity to 1.5 million container lifts annually, higher than any other East Coast port.

Growth at the Port of New York and New Jersey also helps grow an economy. With opportunities ranging from trucking to technology development, the maritime sector is a driving force in an economy that provides 400,000 regional jobs, \$25.7 billion in personal income, more than \$64.8 billion in business income, and nearly \$8.5 billion in federal, state, and local tax revenues.

Safeguarding the region's air, land, and water is part of the Port of New York and New Jersey's commitment to be a global leader in addressing climate change. ExpressRail's five-year strategic goal aims to remove 1.5 million truckloads of cargo off roads, helping to reduce greenhouse gas emissions.





Port Tampa Bay



Paul Anderson President and CEO

"Port Tampa Bay is by far Florida's largest port by cargo tonnage and land. We are also one of the most diversified ports in the Southeast, handling all major cargo categories as well as a top 10 cruise port with more than 1 million passengers per year. But it is our container business that is growing exponentially as the explosive growth along the Tampa Bay/Orlando I-4 Corridor in Central Florida drives the desire for BCOs and container carriers alike to get closer to their customers. Fortunately, we envisioned this ability to provide greater efficiencies years ago. We have invested in cranes, road, rail and berth improvements and continue to do so to better serve this market. In the process, we have become the most efficient port to serve all of Florida because we are serving it from its middle."

Port Tampa Bay 1101 Channelside Drive Tampa, FL 33602 800-741-2297 www.porttb.com



Port Tampa Bay has emerged as Florida's new supply chain solution for container cargo—and in many cases, it's most efficient. The front door to I-4: The addition of

three new direct Asia container services last year provided a giant leap forward in serving Florida's largest and fastest growing marketthe Tampa Bay/Orlando I-4 Corridor. This Central Florida region is also one of the hottest industrial real estate markets in the country and Florida's hub for distribution, logistics and manufacturing. Home to close to half of Florida's population of 21 million residents, and welcoming a majority of the more than 126 million tourists who visit every year, the I-4 Corridor has the largest concentration of DCs in the state. This growth is fueling demand for everything from retail, ecommerce, food & beverage, to energy products, and construction & building materials. To keep pace, the Port is busy expanding terminal capacity with additional paved storage, extended berths, cranes and equipment, and new trans-load warehouse facilities.

Last year alone, Port Tampa Bay welcomed CMA CGM, COSCO, Evergreen, APL, OOCL, Maersk and Sealand to its family of container lines offering new services, joining established carrier partners ZIM, MSC and Seacat. For the beneficial cargo owners in its immediate backyard, this was especially good news. These companies are seeing significant savings in their supply chain/distribution costs as truckers can now make as many as 3 to 4 round trip deliveries per day from Port Tampa Bay to their DCs, which then service the entire state and reach into markets throughout the Southeast and beyond.

Together with partners like container terminal operator Ports America and cold storage specialist Port Logistics Refrigerated Services, Port Tampa Bay is expanding infrastructure and capacity to ensure it is well positioned for continued strong growth. In keeping with the Port's master plan "Port Vision 2030," it continues to align capital investment to sustain and grow its core lines of business, while also capturing new business through strategic diversification into additional new markets and commodities.





ProTrans



Gary Cardenas CEO

For over 25 years, ProTrans has been providing innovative customer solutions. We are a fullservice 3PL provider offering logistics design, carrier procurement, supply chain management and transportation management.



ProTrans International, Inc. 8311 N. Perimeter Road Indianapolis, IN 46241 317-240-4100 marketing@protrans.com www.protrans.com





Who we are

ProTrans is part of ProTrans Holdings, a private shareholder group, which includes ProTrans International, Inc., TOC Logistics International, Inc. and Millennial Transport Services.

ProTrans is a nonasset-based US logistics management company headquartered in Indianapolis, IN. We operate service centers throughout Canada, Mexico and the United States.

What we do

We are committed to providing solutions that expand our customers' resources through value-added service enhancements, leadingedge technology development and highly skilled customer support specialists.

How we do it

We create your unique logistics plan, utilize our versatile management and offer strategic control with our proprietary software and analytic tools; you control your shipments anytime and anywhere.

• Turnkey third-party

logistics (3PL): Our 3PL solutions, including supply chain management, supply chain design, transportation procurement and route management, are designed to fulfill the increasingly complex demands of today's logistics.

- Optimization through Consolidation: We move more of your materials with fewer trucks, reducing your carbon footprint while keeping costs down and efficiencies high.
- Optimization through
 Pool Distribution: Our
 pool distribution solutions
 are an extended option
 available to provide cost
 savings in your supply
 chain. Our flexible network
 allows us to receive,
 validate and inventory your
 goods for final delivery in
 a particular geographic
 region thereby greatly
 reducing redundant
 shipping costs and
 unnecessary handling.

- Unplanned/Expedited Freight Management: ProTrans Freight Management solutions move your freight in the necessary time frames with real-time visibility by using dedicated teams
- tracking your loads.
 Comprehensive Materials Management: Flexible warehousing solutions that respond to your unique inventory and fulfillment needs.

focused on monitoring and

- Simplified Cross Border Processing: Multiple validation and verification options for when you need to move inventory across the border.
- Intellectual Talent: ProTrans' overall success lies in our people. We've made a full commitment to our Talent Development Program, an in-depth program covering all departments in our company.











Ben Gase Founder and CEO

The R2 Way

Obsess Over The Customer Do It Now Attitude Take Responsibility Be Different Always Think Positively Compete, Compete, Over-Communicate Do Your Job Play The Long Game It's About The Team



WWW.R2LOGISTICS.COM

WHO WE ARE

Founded in 2007, R2 Logistics is a global provider of transportation services and logistics solutions. As a third-party logistics company, we provide access to thousands of contracted transportation providers. With offices located across the United States we have the capacity to resolve all your shipping needs. Backed by gamechanging technology and our culture for Reliable Service and Relentless Passion, we've built a strong reputation as an industry leader.

CUSTOMER SERVICE IS PRIORITY NUMBER 1

At R2 Logistics we pride ourselves on offering a superior customer service experience. Whether you're a Fortune 500 company or a small family owned business you are valued by R2 Logistics. Our Customer Service Advisory Board was formed to ensure every customer across the board is given the time and attention they deserve. Comprising a member from each of our offices, this group holds a weekly conference call to hold everyone accountable by discussing any service issues or successes. The team also meets twice annually at our corporate headquarters to brainstorm new and innovative ways to offer the best customer service the transportation industry has ever seen.

TAKING TECHNOLOGY FURTHER

R2 Logistics is superior to other 3PLs by how we utilize technology to ensure the highest level of accuracy and service. Our TMS creates data that help shippers streamline tasks and reduce costs. With an integrated customer portal, our tools deliver real-time connectivity across the supply chain. Whether you need transparent visibility to your operations, optimization of your business processes, or strategic data and reporting to help drive decisions, R2 Logistics has the tools you need.

SERVICES & CAPABILITIES

- Managed Transportation
- Truckload
- LTL
- Flatbed & Specialized
- Expedited & Air
- Intermodal
- Ocean
- Reverse Logistics



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Rakuten Super Logistics



Michael Manzione President & CEO

Rakuten Super Logistics' (RSL) mission is to empower e-commerce retailers to compete with any online retailer in the world.

RSL guarantees 100% order fulfillment accuracy and next-day shipments, providing the reliability e-commerce retailers need to grow their business.

RSL works with e-commerce retailers to determine where product should be located in order to get the lowest shipping rates.

Since 2001, RSL has evolved alongside the online seller, but the values have remained constant. RSL remains committed to complete transparency in operations and with responsive U.S.-based in-house client support.

Rakuten Super Logistics

Sales: Jason Chan VP of Sales and Marketing 500 Amigo Ct Ste 100 Las Vegas, NV 89119 866-955-7793 sales@rakuten.com www.rakutensl.com





R akuten Super Logistics (RSL) is the definitive e-commerce fulfillment company committed to providing the best e-commerce fulfillment services worldwide. Founded in 2001 as Webgistix and acquired by Rakuten in 2013, RSL has a long history of order fulfillment experience. RSL currently operates 15 order fulfillment facilities in the United States. Each facility is strategically located near major U.S. ports and metropolitan areas. These strategic locations enable RSL to reach 98% of the U.S. within 1.5 ground shipping days.

RSL simplifies the order fulfillment process and empowers e-commerce retailers by providing the tools and resources that allow them to focus on their business. SmartFill, RSL's cloud-based fulfillment management system, allows online retailers to manage their order fulfillment anytime, and anywhere their business takes them.

SmartFill offers an easy, seamless integration with major shopping carts like Shopify and BigCommerce. SmartFill also provides automatic order importing from numerous marketplaces including Rakuten.com, Amazon, and eBay. SmartFill is accessible from any internet-enabled device at any time, including a mobile phone.

Fulfillment data is automatically organized into charts, graphs, and reports that give clients visibility into their e-commerce order fulfillment operations. SmartFill simplifies billing, giving clients the ability to keep track of every fulfillment cost. RSL also offers SmartFreight, an all-inone, turnkey freight service designed to provide the most efficient and economical transportation solutions to move and manage freight. SmartFreight's shipping solutions include domestic and international freight, customs consultation, and customs clearance. Additional SmartFreight features include door-to-door tracking and shipment optimization.

RSL's combination of infrastructure and technology provides clients a hassle-free fulfillment experience backed by RSL's signature 100% accuracy guarantee. RSL has an unwavering commitment to helping clients achieve their goals and is a true e-commerce partner. Clients can leverage RSL's partnerships with major shipping carriers including UPS, FedEx, USPS, and DHL, to significantly lower shipping rates. In addition to lower shipping rates, utilizing RSL's network of 15 order fulfillment centers allows clients to house their inventory closer to their customers — ensuring a faster shipping time.

With nearly 20 years in the order fulfillment business and as part of the Rakuten family, Rakuten Super Logistics is an experienced e-commerce service provider backed by one of the largest and most successful e-commerce companies in the world.





RateLinx



Shannon Vaillancourt *President and Founder*

Corporate Mission:

We're on a mission to revolutionize the Supply Chain. We partner with customers to accelerate their supply chain intelligence by driving data quality in logistics and delivering real-time, accurate, and tailored analytics, dashboards, and reports.

RateLinx

RateLinx 4602 S Biltmore Lane Suite 104 Madison, WI 53718 Phone: 262-565-6150 sales@ratelinx.com



www.ratelinx.com

Data quality delivers 2020 clarity into logistics.

In the Supply Chain of 2020, you're constantly relying on data to make decisions every day. But what if the data is bad? It probably is. In 2017, Deloitte discovered that nearly 50%



of businesses cited supply chain data as a major barrier. And it's costly. According to IBM, bad data costs US businesses more than \$3.1 Trillion *per year*.

So, what about your logistics data? Are exceptions a burden? Are costs growing? Can you trust your data enough to make confident decisions?

Al-driven data quality to fuel TMS, track and trace, and freight audit

RateLinx is changing the logistics industry. We are the industry data technology leader in transportation intelligence and spend management. Using our nearly two decades of experience working with some of the largest and most reputable supply chain organizations in the world, we're powering the next generation of technology to deliver unprecedented intelligence and visibility into your logistics network.

Our cloud-based data-cleansing technology leverages artificial intelligence (AI) and machine learning to eliminate errors and standardize your data. It delivers powerful insights, accurate analytics, and tailored reporting through an all-in-one logistics data and analysis platform.

With TMS, track and trace, and freight invoice management capabilities, our customers are able to analyze logistics performance and optimize strategies in their global transportation network, from shipment to invoice—all in one place. Equipped with the complete picture and context, customers are able to reduce costs, optimize inventory allocations, and improve customer satisfaction.

Data collaboration and partnership.

We're more than a technology provider. We're your collaborative data partner. Our team uses our proprietary data-first approach called *Logistics-in-3D* to help you diagnose problems in your logistics and supply chain networks, develop datavalidated solutions, and deploy new strategies with confidence. You can tap our team for support at any time, without paying more.

Reduce costs and get 10x ROI.

With cleansed data at your fingertips, you'll have everything you need to confidently improve inventory management, enhance customer service, and optimize your network. We help you by eliminating exceptions and rate-tolerances, driving tangible results to cost-saving initiatives. By automating processes, we help improve the allocation of financial and human capital, equipping your team to focus more on what matters. Our analytics, reports, and dashboards will show exactly where you are at all times. In fact, we even have an ROI KPI built-in.

Live in 45 days, no IT resources required.

The industry today is placing everincreasing strain on limited IT resources: budget, personnel, and technology. That's why we've designed a cloud-based system that requires no internal IT resources. Our team will have you up and running, with the carriers of your choice, in as little as 45 days.



Red Classic

Outstanding Experiences. Exceptional Outcomes.

Who We Are

At Red Classic, we know that getting things where they need to go-on time and cost efficient-is what shippers need. Red Classic is a wholly-owned subsidiary of Coca-Cola Consolidated, the largest Coca-Cola bottler in the U.S. that's been serving the world's bestknown brand for more than 100 years. Today, we drive operational efficiency for customers across dozens of industries by offering a full range of transportation and fleet maintenance solutions customized for your business

needs. Great brands trust us with their products because we deliver outstanding experiences and exceptional outcomes every day.

Transportation Solutions

With regional company-owned assets, a growing over-the-road (OTR) division and a network of more than 15,000 carrier partners managed through our full-service brokerage department, we have the reliable capacity your business demands. We offer truckload, less than truckload (LTL), dedicated and other logistics solutions for raw materials and finished products throughout the continental U.S. and Canada.

Fleet Maintenance Solutions

With more than 20,000 assets under management and 80+ fullservice maintenance shops, we provide customized maintenance solutions that reduce downtime and labor costs. Our skilled technicians service more than 150 equipment types including light duty vehicles, material-handling equipment, class 7 and 8 tractors and everything in between.

The Red Classic Difference

- Safety Comes First. Safety Comes First is Red Rule #1. We invest in extensive, systematic training and the latest technology to ensure our drivers, our equipment and our freight arrive safely.
- Assured Capacity. As an asset-based 3PL and one of the largest beverage haulers



in the U.S., we understand the demands of today's shipping environment. Our growing network means we can expand with your business as your need for capacity evolves.

- Industry Expertise. Our experienced logistics team has the expertise to address the most complex and demanding shipping environments, saving you time and money.
- Unparalleled Service. Our commitment to extraordinary customer service breeds a culture of partnership with our customers that is second to none. We're proactive and responsive, so you can rest easy knowing your freight is handled with care.

Our Promise to You:

- We want you to be delighted with every interaction.
- You can count on us to operate with integrity, always.
- Our expertise is there for you, whenever and wherever you need it.

Experience what our customers already know – no matter what you need, Red Classic delivers.



Services

• Truckload

- Dedicated
- Intermodal
- Flatbed
- Drayage
- Refrigerated
- Logistics Solutions
- Managed Transportation

Dave Glancy

President

Mission Statement

Our mission is to be

the safest provider of

transportation. logistics

to enable our customers

and maintenance solutions

and communities to thrive.

Fleet Maintenance







Red Classic 1800 Continental Blvd. Suite 103 Charlotte, NC 28273 866-768-8809 sales@redclassic.com www.redclassic.com





RMX



Kelly Greenlee President

Mission Statement

Deliver customer specific logistics solutions through exceptional customer service.

Memberships / Awards

- TIA Member
- NASTC Best Broker program
- EPA SmartWay Transportation Partner (Logistics)
- Diamond Broker Program
 Truck Stop
- ITS Financial
- Transport Topics 2018 Top Freight Brokerage Firm
- SEDEX Respect Program
 Truckers Against
- Trafficking
- Top 3PL by Food Logistics Magazine

RMX Global Logistics

HQ – 355 Food Center Dr. Bronx, NY 10474 888-824-7365

With locations in Lakewood CO, Springdale AR, Monona WI, North Port FL, Fayetteville NC, Petersburg WV, Bronx NY, Manchester NH, Auburn ME

RMXsales@rmxglobal.com www.rmxglobal.com





The RMX Difference

RMX was established in 1983, and over the past 37 years has earned a reputation as a trusted transportation partner to the food products industry. RMX has become one of the leading third-party logistics providers in the country and provides a broad scope of supply chain management services. We value our long-term partnerships, and will earn your business through ongoing innovation, trust and continuous improvement. Come explore the RMX advantage.

Our Services and Solutions

- Full TL, Refrigerated / Dry
- Flatbed
- Intermodal
- Expedited
- Dedicated
- Specialized
- DC & Pool Support Programs
- Supply Chain Management 3PL / 4PL Solutions
- EDI / FTP Compliant
- Load consolidation & Order optimization for best cost determinization
- Order to Delivery Visibility
- Exceptional Customer Service
- Final Mile Services into New York City's Five Boroughs

Northeast Last Mile Logistics

Last Mile LLC has a long history of providing transportation in and around NYC,

for over 50 years, and was formed to meet the growing final mile delivery needs. Our ability to navigate the difficult challenges of final mile delivery in the Northeast has allowed us to be a preferred vendor for some of the major protein providers in the United States, and provide them with warehousing and transportation solutions.

- Convenient locations in Carteret NJ and the Hunt's Point COOP Market in the Bronx, NY
- Customized Refrigerated Fleet
- Warehousing and Cold Storage
- White Glove Delivery
- Lift gate Service
- Cross Docking with Delivery Service
- LTL Consolidation
- Power Only Service into the 5 boroughs
- Real Time Tracking / Notifications

Lastmile.rmxglobal.com/deliver 718-775-3570





Rockfarm Supply Chain Solutions



Brad Stewart Chief Commercial Officer

Mission Statement

Rockfarm's Mission Statement is to lower our clients' supply chain "cost to serve." Since our inception, our goal is to deliver visibility of the true cost to serve the market. Whether at the unit or part level, seeing the cost to serve our clients' customers is at the forefront of our service offerings. As a provider of supply chain services, our focus is on creating workflow automation within transportation management solutions, extending our clients' logistics team with our truckload fulfillment solutions while delivering market intelligence through our Supply Chain Coach Services.

Rockfarm Supply Chain Solutions 300 Data Ct. Dubuque, IA 52003 815-573-0138 info@rockfarm.com www.rockfarm.com





Rockfarm is a supply chain services company that delivers a competitive advantage for our clients through our four disciplines: Transportation Management, Truckload Brokerage, Global Forwarding and Supply Chain Consulting. Founded to address supply chain costs through visibility and actionable business intelligence, Rockfarm delivers solutions designed for each of our clients' specific challenges. Our business model deploys transparency to supply chain cost and the market, triggering real-time analytics to optimize under any market condition.

MercuryGate Integrator

Our roots began as a transportation management company using the MercuryGate TMS to support our clients' routing and the optimization of their supply chain across all modes. Due to our service model, Rockfarm developed a deep expertise within MercuryGate and now brings to bear that expertise in delivering MercuryGate technology direct to shippers and logistic service providers alike. In addition, our Supply Chain Coach services directly support existing MercuryGate TMS customers to enhance their MercuryGate experience.

Market Intelligence

Today's supply chain requires real-time visibility to both the order lifecycle and the conditions under which the routing and booking of the shipment occurs. Rockfarm meets those requirements through enhanced visibility of our clients' customers' experience and truckload rate intelligence. Truckload rate intelligence accounts for capacity constraints in the market and shipment planning windows to provide identifiable value in the truckload spot market. Our proprietary API Truckload Rate delivers rate digitization to both the contract and spot market, streamlining our clients' shipment execution process.

Supply Chain Services

Services define our value and Rockfarm delivers value through our technology. Rockfarm client solutions span across many industrial verticals to include food, pharma, hospitality, heavy industrial and others. Whether your supply chain needs are domestic or global, Rockfarm's suite of services and technology applications can provide the requirements to compete in today's competitive market. As your coach, our market insights, suite of technology and the Rockfarm team are your gateway to improving your bottom line.



Supply Chain Solutions



Romark Logistics





Marc Lebovitz President

Mission:

To deliver customized logistics solutions built on an unwavering commitment to providing outstanding service for our customers.

As a family-owned company with integrity, we've built long-term relationships by adhering to our core values:







Romark Logistics 822 South Avenue West Westfield, NJ 07090 Phone: 800-276-2719 sales@romarklogistics.com www.romarklogistics.com





PERSONALIZED SERVICE...ALWAYS EXPERTS SINCE 1954

ounded in 1954, Romark Logistics is a leading third-party logistics and coldchain provider in North America. We service major food, beverage, pharmaceutical, and retail customers worldwide.

As a customized solutions provider, we handle logistics for a wide range of products, from the ingredients stage to finished goods. Romark has masterfully blended its acquisitions of leading packaging, transportation and warehousing companies in the United States into strong, valueadded business units that help provide our customers with personalized, dependable solutions, which include:

Distribution and Fulfillment Solutions

Romark offers contract and public foodgrade warehousing solutions and specializes in temperature-controlled requirements. With the latest automated systems and technologies, we offer a full suite of services, including short and long-term storage, crossdock operations, e-commerce fulfillment, packaging, assembly and JIT delivery, plant support, reverse logistics, and supply chain consulting.

Transportation Management

Whether our customers need dry or temperature-controlled applications, we can

provide customized transportation solutions, including dedicated fleet management, freight management, transportation brokerage, over the road transportation, pool distribution, white glove service, and shuttle service. Our offerings include both asset and non-asset-based solutions.

Packaging/Creating Value-Added Solutions for Our Customers

Romark has a proven record in custom packaging services to receive, package, store, and distribute products and displays to retail stores. Whether you require customized kit assemblies or primary and secondary packaging, Romark provides solutions that deliver superior results.

Real Estate Development and Facility Design

With more than 65 years' experience as an owner and developer of industrial real estate, we understand what it takes to run a modern distribution facility. Applying this operational expertise, we specialize in providing state-ofthe-art facilities that maximize flexibility and future expansion opportunities.





RPM



Al Samouelian CEO

Al Samouelian serves as the chief executive officer. He has created a culture that embraces change and welcomes new ideas, leading to smart innovation and flawless execution driving dramatic value to our diversified customer base.

OUR MISSION

Our mission is to remove the complexity from logistics, providing our customers and carriers with clear communication and total transparency, including shipping, billing for on-time pickup, and delivery.

RPM

301 W. Fourth, Ste 200 Royal Oak, MI 48067 855-585-1910 www.RPMmoves.com



RPM is a complete, end-to-end transportation service provider, supporting all modes of transportation, including inbound materials and finished vehicles. We provide our customers and carriers with a technology platform to view and monitor all shipments. Our load matching, network optimization, and routing technologies allow us to create dense routes for our carrier partners and to maintain control of the asset while providing the very best service and total transparency from pickup to delivery.

We move freight for many industries, including automotive, retail, metals, building materials, consumer packaged goods, food and beverage, energy & gas, and chemicals. We are committed to sourcing spot and dedicated capacity for our customers through our extensive carrier network and powerful industry relationships. We thoroughly vet and monitor every one of our carriers to ensure complete adherence to all regulatory standards, delivering tremendous value to our bulk transport customers' supply chain routes across the U.S. We also move thousands of vehicles per month. Whether you need a full truckload, partial or single unit transport, we have your vehicle transport needs covered. We service all areas, including OEM, remarketing financial institutions, dealerships, fleet management, rental, e-commerce, auctions, cross-border, POV, and repo.







Ruan



Ben McLean CEO

Mission Statement:

Empower the best team in logistics to deliver exceptional experiences for our partners.

Facts About Ruan

- Founded in 1932
- More than 300 operations in North America
- 6,000 team members
- Freight under management \$1.35 billion
- Award winning Megasafe Safety Program

Ruan Transportation Management Systems

666 Grand Avenue Suite 3200 Des Moines, IA 50309 866-782-6669 x1 solutions@ruan.com www.ruan.com



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

Flexible Integrated Solutions

Ruan's Integrated Supply Chain Solutions offer it all, including Dedicated Contract Transportation, Managed Transportation, Value-Added Warehousing, and Brokerage Services. We combine the flexibility of our non-asset and asset-

based capabilities with optimal technology and superior service focused on continuous improvement, cost savings, and supply chain efficiency. The Ruan team partners with customers to evaluate, optimize, and deliver a one-source, integrated supply chain solution. Ruan delivers these benefits and more because supply chain management is our core competency.

Dedicated Contract Carriage

Ruan's Dedicated Contract Transportation service provides complete door-to-door supply chain solutions without any of the hassles of owning and operating a private fleet. We assume all risk, handle labor, navigate regulations, and manage all of the equipment, taxes, and fuel.

Value-Added Warehousing

Innovative warehouse solutions are Ruan's specialty. Our Value-Added Warehousing services offer scalable and agile warehouse space tailored to our partners' requirements. We excel in warehouse management, engineered facility design, site selection, export consolidation, cross docking/ postponement, subassembly, kitting, international crating, and more. Integration with Ruan's warehouse management system reduces touches, improves storage density, and increases overall flow efficiency.



Managed Transportation

Our Managed Transportation solution encompasses network optimization, freight planning and sourcing, mode selection, capacity management, freight audit and pay, inbound, and LTL consolidation. R2.0, Ruan's supply chain technology, is a best-ofbreed transportation management system that builds efficient shipments and provides rich analytics to identify opportunities for continuous improvement and cost savings. Our expert team utilizes these resources to continuously optimize your network.

Brokerage Services

We provide capacity aggregation for transactional shipment management with annual or short-term contracted rates. Our reliable, experienced team of certified transportation brokers is an excellent support for dedicated or private fleets.







Mark Cabrera CEO

Leverage our wide array of logistics capabilities for omnichannel supply chain solutions that provide speed, service, and scalability.

Saddle Creek Logistics Services



t Saddle Creek, we specialize in helping retailers, manufacturers and e-commerce companies get products where they need to be quickly, costeffectively and seamlessly.

Sophisticated Solutions

As an asset-based 3PL, we focus on designing and delivering omnichannel logistics solutions for our clients. Our approach is solution based and data driven, using the most advanced operational methods and sophisticated technologies.

Full Range of Services

Clients utilize our omnichannel fulfillment, warehousing and transportation services as stand-alone offerings or as part of an integrated logistics solution. They can also take advantage of a host of value-added services such as packaging, kitting, display building, embroidery and engraving.

Through our custom fulfillment solutions, they're able to accommodate customer requirements in a variety of channels including e-commerce, direct selling and subscription/continuity programs.

Extensive Resources

Clients also have access to our nationwide network of strategic locations—46 sharedspace and dedicated facilities across the country—totaling more than 21 million square feet of warehouse space. They enjoy cost-effective, service-driven transportation capabilities including a large private fleet, a full set of brokerage services and extensive relationships with all major parcel providers.

Service Excellence

Saddle Creek is one of the largest familyowned logistics providers in the country. We have been in business for over 50 years and are recognized in our industry as an extremely high-level service provider.

Clients will tell you that we stand out due to our ability to deliver on our promises. This is driven by our company culture, which is one of integrity, strong performance expectations, a high level of accountability and the commitment to doing what is right for our clients and their customers each and every day.

We'll do *Whatever It Takes!* to ensure that your supply chain delivers.



Saddle Creek Logistics Services

3010 Saddle Creek Road Lakeland, FL 33801 888-878-1177 sales@sclogistics.com sclogistics.com









Edward Gonzalez

Mission Statement

To be the leader in ocean transportation and logistics to all the markets we serve. Our existence, progress, and success depend on our customers. By creating a positive environment where our employees can work in partnership with our customers, large and small, we shall provide the highest quality service without exception.

Seaboard Marine

Headquarters 8001 Northwest 79th Ave. Miami, FL 33166 P 305.863.4444 F 305.863.4400 customerservice@seaboardmarine.com seaboardmarine.com





Established in 1983, Seaboard Marine is a wholly owned subsidiary of Seaboard Corporation. We are an ocean transportation and logistics company that provides direct, regular service between the United States and the Caribbean Basin, Central, and South America. Seaboard Marine plays a significant role in promoting trade in the Western Hemisphere.

Our success in the region for over three decades has enabled us to expand gradually into new markets. We now serve over 40 ports in over 25 countries. Seaboard Marine's facilities include a private terminal of nearly 90 acres at PortMiami. We carry more cargo to and from PortMiami than any other carrier. This facility complies with and exceeds all governmental security mandates; it operates seven days a week, 365 days a year, a unique convenience for our customers.

Additionally, Seaboard Marine provides services from other U.S. Gulf and Atlantic ports. Operating from our 62-acre terminal in Houston, we offer weekly services to multiple ports in the Caribbean and Latin America. Seaboard Marine also provides weekly service between Philadelphia, PA, Brooklyn, NY, Savannah, GA and the Caribbean Basin, Central America and South America.

Seaboard Marine's fleet of nearly 30 vessels and over sixty thousand (60,000) dry, reefer, and specialized containers supports direct service between the U.S. and major ports of call throughout Latin America and the Caribbean. Our reliable fixed-day schedules make it simple for customers to coordinate manufacturing schedules and maintain inventories at costefficient levels. Convenient schedules, outstanding customer service, and an expanding fleet of ships both commanded and managed by a company of dedicated professionals, have become the trademark of Seaboard Marine.





SEKO Logistics





James Gagne President and CEO

- Omni-Channel Logistics
- Air Freight Forwarding
- Ocean NVOCC Services
- Ground Transportation
- Home Delivery
- Heavyweight/Final Mile
- White GloveCross-Border
- eCommerce
- Expedited Cargo
- AOG/NFO Services
 Aerospace Logistics
- MedTec Logistics
- Store Development Logistics
- Warehousing & Distribution
- Customs Brokerage
- Value-Added Solutions
- Supply Chain Software
- TMS
- WMS
- Purchase Order Management
- Asset Management
- Inventory Management
- Demand Chain Management
- 60 USA Locations
- 120 Global Locations
- 40 Countries

SEKO Logistics

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> International +1 630-919-4800



CREATING THE FUTURE OF LOGISTICS

e provide a suite of logistics services which enable you to use your supply chain as a competitive differentiator. As a client-centric organization, we are powered by the expertise of our people and our in-house developed, best-in-class, configurable technology. It is this combination which gives SEKO its strength.

With over 120 offices in 40 countries worldwide, our unique ownership management model enables you to benefit from Global implementation experience and expertise across all industry sectors, coupled with vital in-country knowledge and unparalleled service at the local level.

We have a flat management structure, with just three layers between you and the CEO, making us 'fast on our feet' in delivering solutions that can meet your exact requirements. This lean and nimble structure increases our decision-making speed and gives us an ability to implement scalable solutions which far exceed those of our competitors. This unique business model provides our clients with:

- Fast, efficient decision-making
- Minimal bureaucracy—easy to do business with
- Local expertise through people that really care
- Responsiveness and reliability
- Flexibility and consistency
- Hands-on service and support
- Personal relationships
- Creative, configurable solutions
- Individual vertical sector experience





The Shippers Group





Rob Doyle President

Mission

Our mission is to provide the ultimate supply chain experience by **Understanding, Delivering and Improving** services that meet our customers' needs.



56 SHIPPERS

Since 1901, we've been in forward motion toward being an industry leader in third party logistics with a focus on our people, our processes and the technology we employ to enhance the overall customer experience.

With 12 locations and 5.3 million square feet of distribution space in 5 states from coast to coast, The Shippers Group is nationally recognized for the full range of logistics services we offer that include Public and Contract Warehousing, Contract Packaging, E-Commerce Order Fulfillment, and Transportation Services.

We are BRC Superior with an AA rating and AIB Superior with 990 out of 1000. The Shippers Group is a Green Citizen named by *Inbound Logistics* as a leading company that goes above and beyond to ensure global supply chains are sustainable and operations are socially and environmentally friendly.

World Class Supply Chain Support

Supply Chain performance drives our customers' bottom line and that's why The Shippers Group provides world class supply chain support from receiving inbound products to shipping outbound orders, inventory management and contract packaging. We are focused on Continuous Improvement to keep pace with consistent shifts in consumer demand. We are applying LEAN initiatives for improved productivity and accuracy. TSG is among *Inbound Logistics'* Top 100 3PL Providers for 2019.

The Shippers Group is implementing innovative solutions to effectively manage complex supply chains while reducing costs. Our systems provide agile support to meet the unique needs of our multi-customer distribution operations. From pick-tovoice, layer pickers, robust WMS and LMS systems, we're employing and developing innovative methods within our operations, improving accuracy and efficiency.

The Shippers Group

1015 W. Wintergreen Rd. Hutchins, TX 75141 214-381-5050 theshippersgroup.com info@ shipperswarehouse.com





SMC³



Andrew Slusher *President and CEO*

Mission Statement

SMC³ is the transportation industry standard for intelligent data, technology and education solutions disseminated through the integration of innovation, excellence, neutrality and community. Through its logistics solutions and educational events, SMC³ works to consistently raise the level of knowledge, collaboration and technological capability in the freight transportation marketplace. SMC³'s deep-seated core values of integrity, consistency, thought leadership and operational excellence support this mission and provide a foundation for a unique portfolio of industry solutions. The company's goal is to create a frictionless world for the transportation of goods by seamlessly connecting and empowering the industry.

SMC³ 500 Westpark Dr. Peachtree City, GA 30269 800-845-8090 sales@smc3.com www.smc3.com

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LTL Technology and Data

With its range of solutions that integrate seamlessly into current business systems, SMC³ supports customers' needs as they grow, whether they're dealing with 10 shipments or 10,000 shipments per day. Shippers and 3PLs use SMC³'s peerless rating solutions to optimize their transportation spend, saving time and money on their freight shipments throughout North America.

Throughout its history, SMC³ has built unrivaled cachet in the industry. establishing itself as a stable and trustworthy partner that is a neutral voice serving shippers, carriers and thirdparty logistics companies with equal attention. The company's position as a leader has been honed through decades of developing secure and reliable content. Even as the company grows, it remains committed to its founding principles, motivated not by profit but by introducing dependable products that fill an industry need.

SMC³'s wide array of shipment lifecycle optimization technology includes:

- CzarLite LTL base rates for the U.S., Canada and Mexico
- Bid\$ense Truckload and LTL freight transportation bidding and pricing negotiation
- RateWare XL Multi-tariff pricing management
- BatchMark XL Rapid LTL freight rating and analysis
- CarrierConnect XL Carrier points of service and transit times
- Cost Intelligence System Profitability management for truckload and LTL carriers

With these tools, SMC³ customers can remove manual processes from their supply chains, which can help their businesses rise above the rest by allowing them to re-deploy resources to revenue-generating activities.



Education

SMC³ extends its expertise through supply chain educational forums across North America. Attendees keep current on industry trends and best practices used by global supply chain leaders at Connections and Jump Start, SMC³'s two annual supply chain conferences.

The strategic educational and networking events feature cutting-edge, forwardthinking sessions, top-tier presenters and unique networking opportunities. SMC³ works to create events that facilitate lasting collaboration between logistics and transportation professionals from carrier, shipper, 3PL and technologyprovider verticals. SMC³'s technology, data and educational solutions are backed by a lifetime of industry understanding and technical expertise.





South Carolina Ports Authority



Jim Newsome President & CEO

Mission Statement

South Carolina Ports Authority (SCPA) promotes, develops and facilitates waterborne commerce to meet the current and future needs of its customers, and for the economic benefit of the citizens and businesses of South Carolina. SCPA fulfills this mission by delivering cost competitive facilities and services, collaborating with customers and stakeholders, and sustaining its financial selfsufficiency. Port operations create 1 in 10 S.C. jobs and generate nearly \$63.4 billion in economic activity annually.



South Carolina Ports Authority 200 Ports Authority Drive Mount Pleasant, SC 29464 843-577-8786 www.scspa.com



South Carolina Ports Authority's reliable port system stands ready to be your supply chain partner with a refreshing approach — run terminals efficiently, move freight quickly and communicate directly with customers to meet their needs.

S.C. Ports offers shippers the expertise and flexibility needed to create customized solutions. Shippers benefit from S.C. Ports' Supply Chain Authority service — which brings together experts in operations and terminals, information technology, commercial real estate and economic development — to solve any logistics challenges.

This expertise is coupled by the Port of Charleston's skilled workforce, efficient operations and big-ship capabilities. SCPA is investing \$1.6 billion from fiscal years 2016 to 2021 to increase capacity and enhance infrastructure.

The densification and modernization of Wando Welch Terminal increases that terminal's capacity to 2.4 million TEUs; it will also have 15 ship-to-shore cranes with 155 feet of lift height by 2021.

In early 2021, S.C. Ports will achieve a major milestone with the opening of a new container terminal in North Charleston. The first phase of the Hugh K. Leatherman Sr. Terminal will have a 1,400-foot-wharf and five ship-to-shore cranes with 169 feet of lift height. The terminal will double port capacity at full build-out.

The opening of the Leatherman terminal will coincide with Charleston Harbor achieving a 52-foot depth in 2021, granting mega container ships access to terminals any time, regardless of the tides.

These major infrastructure investments will enable S.C. Ports to handle four 14,000-TEU ships at one time, ensuring the seamless movement of cargo in the era of big ships and growing e-commerce demands.



Port of Charleston customers benefit greatly from access to consumers in the Southeast, which is the fastest-growing population in the U.S.

S.C. Ports' two inland ports in Greer and Dillon, S.C., expand access to consumer markets and efficiently move cargo to and from the Port of Charleston via overnight rail, which drives efficiencies and cost savings for shippers.

With great experience handling cargo for South Carolina's booming advanced manufacturing sector, S.C. Ports is now focused on growing retail cargo volumes, expanding rail networks and developing port-dependent real estate.

Companies in need of well-run ports and distribution centers are turning to South Carolina to ensure the seamless delivery of goods to desired markets. The availability of Class A industrial space, combined with crucial access to both Southeast consumers and the Port of Charleston, makes South Carolina an ideal site for distribution centers.

S.C. Ports is ready to deliver customized business solutions for your shipping and distribution needs. Learn more at scspa.com/supplychainauthority/ and rightspacesc.com.



Industries and the second seco

Span Alaska



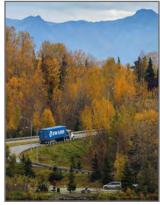
Tom Souply President

MISSION

To be recognized by our customers as providing the highest level of service and reliability in the Alaska marketplace.

Extreme reliability provides for long-lasting customer loyalty.









WE KNOW ALASKA

People know Span Alaska for our unmatched transportation services, smoothly moving freight from the lower 48 to the Last Frontier. With five Alaska terminal locations—in Anchorage, Fairbanks, Kodiak, Wasilla, and Soldotna—Span Alaska offers multiple strategic centers to better serve all of your transportation needs. Our locations, facilities, schedules, connections, strategies, services, equipment, and staff have been chosen with one goal in mind to make your life easier by solving your transportation challenges.

EXPERIENCE

Span Alaska moves more LTL (less than truckload) freight than any other carrier to Alaska-we've built a solid infrastructure that includes equipment, manpower and facilities in key locations across the state to provide our clients with service that is consistent, fast and flexible.

RELIABILITY

Our comprehensive logistics, single chain of responsibility, guaranteed sailings and focus on customer service give you the peace of mind that your shipment will be on time and in good hands.

CUSTOMIZED SOLUTIONS

Shipping is not a one-size-fits-all solution. We take the time to find the solution that best fits your company's shipping needs, including shipping size, type, timing, warehousing, inventory needs and more.

Email rate@spanalaska.com for rate quotes.



Span Alaska 800-257-7726 rate@spanalaska.com www.spanalaska.com



Suddath



Brad Liddie SVP of Global Logistics Operations The Suddath Companies

Global Logistics Supply Chain Provider

Whether you are shipping product around the world or need final-mile delivery, Suddath[®] is trusted by 100s of brands nationwide because of our streamlined processes and care for all products from dry non-perishable foods to sensitive medical equipment. Suddath works as a collaborative partner, helping to simplify supply chains by improving efficiency, scaling with our client's needs and providing personalized and innovative solutions to solve unique challenges. Working as an extension of your team, we leverage our 100 years of experience, breadth of services and extensive resources to quickly respond to changes while maintaining the stability and reliability of your supply chain.



Suddath 800-288-7833 suddath.com/logistics





Why Suddath

Ranging from small startups to large multi-national corporations, our customers know they can depend on us to be there when and where they need us. Suddath aligns with your business by acting as an extension of your organization, tailoring solutions to meet your business objectives. As a strategic partner, we help customers enhance visibility, drive synergies, and provide scalable solutions to your challenges, often anticipating needs before they arise. With over 800 days lost time injury (LTI) free and our recent ISO 9001:2015 certification, our global logistics clients entrust their brand and merchandise into our care based on our mutual dedication to continuous improvement.

Scalable End-to-End Service Solutions

As a full-service logistics company, we address needs quickly and efficiently through our breadth of services, which include:

- Temperature-controlled, medical-
- compliant and food-grade warehousingLabeling, kitting and other value-added
- services
 Cross docking, consolidation, distribution and B2C fulfillment
- Air and ocean freight forwarding with customs clearance as NVOCC
- Access to foreign trade zone activated, bonded space
- Less Than Truckload (LTL) and truckload transportation management

Our end-to-end service solutions make it easy for you to assess your requirements, while adjusting according to your current project needs.

Innovative Technology for Greater Transparency

Always know where your products are and when they will arrive with Suddath's advanced warehouse management systems (WMS). Our technology enables you to manage inventory 24/7 from any device, with visibility and direct access through a user-friendly customer portal.

Specialized Care in Your Industry

Our experienced team blends a consultative approach with the value-added services, delivery solutions, technology, facilities and a comprehensive global network required to handle all your logistics needs. With over 100 years in operation, we have developed specialized skills and expertise in a wide range of industries, including but not limited to:

- Medical/pharmacy
- Food/beverage
- E-commerce
- Retail

Global Reach, Local Touch

With Suddath as your global logistics provider, you can always expect reliable service, consistent quality and a commitment to safety around the globe. We have 20 owned national locations as well as vetted partners around the world serving more than 150 countries.





Sunland Logistics Solutions



Sunland Logistics Solutions is a supply chain and logistics partner specializing in providing warehouse, inventory management, and value-added services to companies primarily in the retail/ e-commerce, automotive, industrial, and chemical industries. Originally founded in 1982, Sunland has been experiencing significant growth and attracting some of the industry's top talent. The team is focused on being a flexible partner who provides world-class service with a winning continuous improvement culture. Sunland's services include, but are not limited to:

- Inventory management
- Order fulfillment
- Reverse logistics
- Supply chain visibility
- Warehousing
- ISO-9001 certified operations
- Foreign Trade Zone
- Hazmat Storage
- Shuttle Transportation
- Value-Added Services

High-Performance Team

The executive leaders at Sunland are intent on getting the right people on the bus, in the right seats. Building, growing, and aligning a diverse team of talent with a positive culture is essential to providing customers with high performance.

Process Leadership

Sunland implements the 10 Deliverables of Process Leadership to ensure the team is

consistently executing to our customer's service expectations whether we're kitting, quality testing electronics, or subassembling automotive bumpers. Process leadership is the foundation for achieving operations excellence and earning customer trust.

Advanced Technology & Innovation

The Solutions Lab is the innovation center for Sunland's IT and engineering team who are passionate about leveraging data to provide customers with powerful insight, so they can make better, faster business decisions. The Solutions Lab offers:

- Efficient integration
- A stable + secure cloud-based infrastructure
- Quality control
- Inventory visibility
- Improved productivity

Quantified Value to Customers

Adding value to customers' supply chains is the goal. Sunland's Strategic Customer Success Teams collaborate with customers to develop supply chain solutions that help support their organization's strategic goals & specific initiatives.

Types of Quantified Value:

- Decreased
 - costs, risk, or inventory
- Increased
 - Safety, service levels, quality, compliance, visibility, cash flow, profit, capabilities, market share



CEO

Purpose: To help our customers do what they do better!

Vision:

To become a great 3PL company where people want to work and customers want to buy.

Company Values:

- Safety First
- Servant Leadership
- Learning Organization
- Results Matter

Industry Expertise:

- Retail / e-commerce
- Automotive
- Chemical
- Industrial





Sunland Logistics Solutions, Inc. Corporate Office 1312 Old Stage Road Simpsonville, SC 29681

864.295.0081 Solutions@SunlandLS.Com SunlandLogisticsSolutions.com





Sunset Transportation



Lindsey Graves Chief Operating Officer

Customized Solutions:

- Logistics Management
- Cross-border Logistics & Warehousing (MX)
- Shipper Technology
- Freight Audit & Payment
- Domestic & International
- Brokerage • Expedite

Customer Service Promises:

- Savings
- Visibility
- Data-Driven decisions
- Continuous
 Improvement
- Relationships, not Transactions

Industry Verticals:

- Automotive
- Construction
- Consumer Goods
- Food/Beverage
- ManufacturingPackaging
- Pet Food/Ingredients

Sunset Transportation

11325 Concord Village Ave. St. Louis, MO 63123 Sales@SunsetTrans.com www.SunsetTrans.com Phone: 314-756-8593



two-time Inbound Logistics Top 10 3PL Provider, Sunset is proud to deliver on our five customer promises through diverse and holistic 3PL solutions, our proprietary domestic and international LOGIK shipper dashboard and a strong focus on transparent, flexible service.

Is it time to TRULY manage your supply chain?

Sunset customers can get back to mission-critical business knowing their supply chain is being analyzed, monitored and improved month over month. We are accountable for providing ongoing savings and efficiencies through:

- Bid management and carrier procurement
- Route optimization & load planning
- TMS integration and visibility
- Freight bill audit and payment
- KPI compliance and reporting specific to your business needs

Need more visibility in your logistics program?

- Do you have eyes on every domestic and international shipment within your network?
- Can you access multiple carriers' pricing across modes within your system?
- Do you know if you're utilizing the lowestcost carrier and right mode for every shipment?

If the answer is no, you're not alone! Even the most complex supply chains operate with significant gaps in visibility due to inefficient technology or unknown solutions. Sunset works to bridge these gaps with LOGIK, our proprietary shipper dashboard that provides:



- Shipment metrics, by spend, volume, mode, and charge
- Future, in-transit, and past shipment status via interactive maps for both domestic and international shipments
- Carrier selection, safety and compliance
- GL reconciliation
- Analytics to monitor shipment location details, assessorial costs, lane volume, commodity information and user specific KPI reporting

Why Sunset?

As a second-generation family business, Sunset places a high value on reliable, flexible customer service; putting our customers first as we have for the past 30 years! Let us help you navigate the challenges of strategic supply chain management. Join the Sunset family and see the difference.





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Steve Syfan Executive Vice President

Who We Are:

Syfan Transport is a Southeast-based carrier fleet featuring 24-7 dispatch, on-board GPS and ELD-compliant systems on every truck, and transparent reporting on all shipments. Together with its 3PL arm, Syfan Logistics, the company provides a diverse array of shipping needs throughout the continental United States, Mexico and Canada.

Vision Statement:

We seek to be a guiding light of ethics, integrity and Christian faith in our service to the transportation industry.



Syfan Logistics PO Box 1294 Gainesville, GA 30503 Steve Syfan, Executive Vice President Steve.Syfan@ SyfanCorp.com SyfanCorp.com Toll-Free: 855.287.8485 Local: 770.287.8485



Shipping & Logistics Without the Drama

Syfan Logistics and asset-based Syfan Transport have always focused on delivering the highest level of transparency and reliability for customer shipments—with no surprises and zero drama.

To better serve customers, Syfan expanded its offices last year, bringing all departments under one roof. The 18,000 square-foot addition will accommodate projected growth with more room for accounting, human resources and training departments that are now together with the sales and logistics staff at the company's headquarters north of Atlanta in Gainesville, Ga.

Syfan currently employs approximately 350 professionals, and the extra space will allow for another 100 or more new team members, according to CEO Jim Syfan.

Growing Fleet

Meanwhile, Syfan continues to grow its over-the-road fleet with a new contingent of Peterbilt trucks for 2020—addressing customer demands for even greater accessibility to equipment across the country. Syfan Transport's carrier fleet is supported by several hundred trailers dry vans, flatbeds and the industry's most advanced temperature-controlled reefers with cold-chain monitoring and solar panels.

On the logistics side, Syfan further draws from an expansive network of carrier partners to bolster its service and fill gaps. Syfan Logistics has grown into one of the leading logistics services in the United States. Inbound Logistics, Transport Topics and other publications have consistently recognized the company in their rankings of the nation's top 3PLs.

Primary Insurance

Syfan goes the extra mile by backing every load with primary cargo insurance—a commitment practiced by only a small percentage of the industry.

Syfan Services

Transport

Numerous Syfan Transport fleet trucks and equipment options are available around the clock. And all support is personally handled by the company's own 24-7 dispatch team (as opposed to a third-party answering service).

Syfan Logistics



Executive team: Steve, Jim and Greg Syfan

Expedited

Syfan's long history with JIT shipping for automotive manufacturers and small parcel air loads has forged a unique sensitivity to deadline-oriented shipping.

Third-Party Logistics

For shippers faced with a sudden spike in shipping volume or the occasional spot load, Syfan Logistics fills those emergency gaps.

Syfan Power Only

With much greater shipper demand these days for drop-and-hook shipments, Syfan's Power-Only single drivers and teams excel in easing sudden spikes in your shipping volume or filling in for company drivers who may be out of hours under ELD rules.

Yard Management Support

For warehouse and storage operations, our independent Yard Management Support division—Turbo Sales & Leasing—provides sales and leasing of terminal tractors.

Freight Management Services

Syfan Logistics also can manage a company's entire shipping program, providing significant cost savings.

Project Management

Whether relocating a frozen food shipment from a damaged warehouse or moving large equipment, no job is too big or too small.

Customer Industries:

- Food and Beverage
- Parcel shipping
- Automotive
- Manufacturing
- Healthcare
- Construction materials
- Retail/Consumer products
- Electronics
- Paper products



Taylored Services

Jim DeVeau President and CEO

Mission Statement:

We have become a leader in fulfillment by thinking like our clients, providing the services they need when and where they need them. We strive to be the top provider of distribution and fulfillment services to the retail apparel, footwear and accessory markets.



Taylored Services

33 S. Wood Ave. Iselin, NJ 08830 844-RING-TDF www.tayloredservices.com

> Contacts: Brian Southwell VP of Business Development and Marketing bsouthwell@ tpservices.com

Chris Kearns VP of Key Accounts chris@tpservices.com

Taylored Fulfillment

Services. Since our humble beginnings in New Jersey in 1992, Taylored Services has grown to become a national leader in distribution, fulfillment and warehousing. We have achieved this status by providing the services our clients need when and where they need them.

Our distribution centers are located near the nation's busiest ports of Los Angeles, Long Beach and New York. We work with a diversified client base including

wholesalers, manufacturers and retailers and our expertise extends to multiple brand and accessory categories.

We have invested significantly in systems and technology and maintain long-term relationships with all of the other interim suppliers along our clients' boxes journey. As a result, our clients can track their merchandise at every step through and from our warehouse to multiple points of destination.

Our services include:

- Warehousing and Distribution
- Supply Chain Management
- Value-Added Services and Merchandise Rework
- Transportation Management Services

Warehousing & Distribution

Taylored Services operates strategically located warehousing facilities in major locations on both coasts of the US. While our clients' products are stored with us, they are safe, secure and well-tracked. If products require a dedicated facility, or need to share space in one of our distribution centers, we have the resources and experience to meet our clients' warehousing and distribution needs, including:

- Pick & Pack
- E-Commerce
- Receiving All receipts processed against service orders – EDI or flat file transmissions
- Inventory Control Radio frequency barcode scanning and cycle counts
- 24/7 real time inventory visibility & reports through Taylored Access
- Fulfillment Designed to meet



client-specific needs (FIFO, LIFO, serial or lot #)

• Electronic Notification (EDI, flat file or Taylored Access)

Supply Chain Management

We work closely with our clients and all of their and our channel partners to ensure that we are implementing the most effective and efficient supply chain solutions, particularly with regard to warehousing, distribution and packaging.

Value-Added Distribution Solutions

From product inspection to ticketing, we offer a wide range of services to meet our clients' needs inside the box. Among the multiple value-added services Taylored provides are:

- Re-packing, re-ticketing & assortments
- Point-of-purchase display assembly
- Inserts and labeling
- Returns client-defined processing, inspection, quality control and tracking

Transportation Management Services

Our expertise, experience and relationships extend to flexible and cost effective transportation solutions. We help our clients reliably move their products into and out of our warehouses.

Our shared commitment to your objectives makes us a dedicated provider focused on the very same goals that drive your business. Contact us today at (844) RING TDF, and let us put our experience to work for you.





TransGroup Global Logistics

- U.S. Owned Globally Connected
- Transport & Logistics Nationwide/Worldwide
- Global Warehousing & Distribution
- Integrated Supply Chain Management
 Industry-Leading
- Technology
- Customer Centric Approach
- Custom Tailored Systems & Solutions
- Heavy Project
 Logistics







TransGroup Global Logistics

18850 8th Ave S. Seattle, WA 98148 800-444-0294 info@transgroup.com www.transgroup.com





Our logistics expertise is a balanced cross-discipline of domestic, international and warehouse/distribution services, making TransGroup a true singlesource transportation and logistics provider. Our 'Customer Centric' approach, global reach and industry-leading software enable us to do just that. We partner with our clients to tailor and integrate logistics systems and solutions that deliver value across the entire enterprise.

We create logistics solutions that matter.

International Services

- Global Air
- Worldwide Consolidation
- FCL / LCL
- Air & Ocean Charter
- Complete Project Cargo Services
- Dangerous Goods
- Customs Brokerage
- C-TPAT Validated
- Overseas Warehousing & Distribution
- FMC OTI / NVOCC Licensed

North American Services

- Next Flight Out
- Next Day AM / PM
- Second Day
- TranSaver 3-5 Day

- Express LTL / FTL
- Hot Shot Options
- Specialized Equipment
- Air Charter
- Trade Show Services
- Asset Recovery / Reverse Logistics
- White Glove Services
- Warehousing & Distribution
- TransBorder Expertise (Canada/USA/ Mexico)

Technology

- Global Tracking
- Online Shipment Initiation
- Worldwide P.O. Management
- Proactive Milestone & Status Notifications
- Reports / Metrics
- Global Warehouse Management
- TMS Online LTL Rating & Dispatch
- EDI / XML / ERP Integration
- Internally Developed for Maximum Flexibility

Get our Mobile App by visiting: http://app.transgroup.com







Transporeon



Ed Moran Managing Director and SVP Sales & Marketing

Mission Statement

Transporeon provides logistics professionals with new ways to improve processes and significantly increase logistics efficiency and sustainability with an unsurpassed global network that creates an extensive ecosystem for shipper-carrier collaboration. By running ever-evolving logistics platforms, publishing unique industry insights and offering modular digital solutions, we enable shippers and carriers to engage at different levels of digital maturity and achieve continuous improvement.



Transporeon Group Americas

500 Office Center Drive Suite 400 Fort Washington, PA 19034 contact-us@transporeon.com www.transporeon.com



Transporeon cloud-based logistics platforms provide end-toend transportation management software solutions—a full-service portfolio for shippers, suppliers, retailers, goods recipients and carriers that enables shared efficiencies for all logistics partners in the supply chain.

The company

connects a worldwide network of more than 1,200 shippers and retailers with over 90,000 logistics service providers in 100+ countries in real time through its three transportation management platforms: Transporeon for shipment execution, Ticontract for transportation procurement and Mercareon for retail-specific dock scheduling.

These platforms for intelligent transport logistics create a digital connection between shippers and carriers to boost logistics performance and profitability with every freight load. By leveraging the latest capabilities, including artificial intelligence and predictive analytics, Transporeon solutions cut CO2 emissions, empty runs and truck waiting times while digitizing manual processes.

Delivering Connections

Global, security-certified Transporeon platforms optimize logistics processes with solutions that include:

- Transportation Sourcing/RFP Management
- Rate Management
- Shipment Execution
- Dock Scheduling
- Tracking & Visibility
- Connectivity & Integration
- Market Intelligence
- Market Intelligence

Transportation Sourcing

The Ticontract multimodal freight bid management platform accelerates your strategic sourcing process. A neutral sourcing technology specifically created to comprehensively analyze and optimize



transportation bids, Ticontract can help you find the right logistics service providers and reduce administrative workload associated with the RFP process for greater market transparency, easily comparable offers and insightful reports at the click of a mouse. Simplify your bid communications with a fully customizable RFI/RFP platform, with integrated features for FTL, LTL, air and ocean.

Automated Shipment Execution

The Transporeon transportation management platform is purpose-built for supply chain communication and efficient, scalable freight assignment. Transporeon offers full connectivity to ERP and a complete range of transportation management functionality to help solve your daily logistics challenges. Cut transportation and administration costs by utilizing spot-market freight assignment for day-by-day capacity and demand matching in real-time to a closed pool of carriers, or fully automated freight assignment to automatically assign the freight order to a contract carrier based on pre-set criteria.

Modular Logistics Software and Agile Connectivity

With access to one of the world's largest and fastest-growing carrier networks, Transporeon provides you with connectivity and services for your carriers on top of your existing ERP or TMS system, in addition to onboarding, consultancy and lifetime multilingual support for both shippers and carriers. Transporeon Americas is based in Fort Washington, PA, with global locations across Europe, Russia and Asia.



Transport America



Eric Anson President

Mission:

At Transport America our mission is to change trucking for the better through a focus on safety, respect, and operational excellence. We fuel this mission through creativity, innovation, and strategic thinking. We create meaningful solutions while delivering the respect our drivers and customers deserve through straightforward communications.

Transport America

sales@transportamerica.com 651-686-2500 transportamerica.com





TRUCKLOAD

Transport America, a TFI International, Inc. company, is a leading truckload and logistics transportation provider based in Eagan, MN since 1984. We have a history of superior service that drives long-term partnerships resulting in the Quest for Quality and Top 100 Best Companies to Work For awards. The trucking company that's changing trucking, Transport America's culture is based on the company core values of safety, sustainability, integrity, and respect. We continually seek to align ourselves with partners who share the same values. Transport America provides a wide range of services to include: over-theroad solo, over-the-road teams, dedicated services, intermodal, and logistics; all servicing the United States, Mexico, and Canada.

For dry-van truckload, we focus on being the right-sized carrier. Transport America is big enough to provide capacity and small enough to know and care about your business. We commit to what we promise and deliver loyalty. In our dedicated division we have customer partnerships spanning decades. To better know and service our customers, we offer the option to enlist on site resources for your business. That's right, a Transport America associate based out of your location to provide personal and responsive service.

At Transport America our mission is to change trucking for the better through a

focus on safety, respect, and operational excellence. We drive this mission through creativity, innovation, and strategic thinking. We create meaningful solutions and deliver respect to our drivers and customers through straightforward communication.

TA LOGISTICS

At TA Logistics, smoothing your supply chain is our purpose. TA Logistics, founded in 2000, has long provided third-party logistics services for manufacturing, industrial and retail-based business. Building from our 20 years in brokerage, we've broadened our portfolio of service offerings. Now we provide for dedicated truckload capacity, freight brokerage, transportation management and network optimization, warehousing and distribution, and supply chain engineering. We take a unique approach to logistics:

1. Understand your supply chain to solve your needs

 Research asset-based logistics solutions
 Provide protection for the fluctuations in your demand





TransportGistics

www.blgen.com www.freighttracing.com www.insourceaudit.com www.productreturns.com www.routingguides.com www.tgibid.com www.tgibid.com

TransportGistics puts you in control with global products and services that provide market leading, simple, incremental solutions for transportation management and logistics functions within your supply chain.

Our cloud-based solutions enable you to:

- Reduce costs
- Improve processes
- Identify hidden costs of transportation
- Improve vendor compliance routing guide
- Improve Supplier Relationship
- Management (SRM)Monitor vendor performance
- Improve shipment visibility
- Generate automatic, status-driven alerts
- Monitor carrier performance with respect to time in transit, service failure, and billing
- Enable collaboration
- Source, procure and execute transportation services

TransportGistics, Inc. 28 N. Country Rd. Suite 103 Mt. Sinai, NY 11766

Mt. Sinai, NY 11766 631-567-4100 Fax: 631-563-2497 sales@transportgistics.com



Transportation Management and Logistics Solutions

TransportGistics is a global, multiproduct and services company that provides market leading, simple, incremental solutions for transportation and logistics management.

Our rich history in micro logistics solutions and macro logistics strategies is the fuel that drives our "simpler is better" model.

Our innovative, incremental strategy to assist and enable our customers to achieve cost-effective independence from legacy practices has been highly successful, resulting in double-digit cost savings, cost avoidance and rapid ROI.

Solutions should not be more complicated than the problems they are trying to solve!

Simpler is better, and that is the approach that we have taken with our cloud-based products and services. These easy-toimplement, easy-to-use solutions allow users to reduce costs and improve operations while managing discrete transportation and logistics management functions. Each solution can be deployed separately or in an integrated environment to meet requirements to improve business processes, reduce costs and enhance service offerings.

- **BLGen:** Create and communicate transportation forms, including packing slips, carton labels, LTL and TL Bills of Lading.
- FreightTracing: Provides complete shipment visibility, including alerts.
- **InsourceAudit:** A freight bill management, shipment information, cost-control portal that enables users to manage and control pricing and performance, freight invoices, payment and information.
- **ProductReturns:** Enables users to automatically generate return authorizations, route shipments via leastcost carriers, generate bar-coded Bills of Lading, and facilitates the receiving and accounts payable/receivable processes.
- RoutingGuides: Enables streamlined and simplified production, maintenance, distribution, and compliance by eliminating the need to print, distribute

Simpler-is-better transportation management and logistics solutions.

and track receipt of new or updated Routing Guides.

- **TGIBid:** TGIBid is a cloud-based shipment auction portal that allows your users to submit your shipments to your carrier partners and then award the carrier with the shipment that meets your criteria (price, transit time, etc).
- TGIRater: Cloud-based solution programmed with your negotiated carrier agreements. Community management allows for hierarchical access with easy management and usability. Company data can be pre-populated for ease of entry and improved data quality. Time in transit and least-cost carrier calculations are performed across your entire carrier base.

TransportGistics products address the inefficiencies in transportation management, reduce freight expense, simplify the functions to be executed, make transportation information immediately visible to all parties involved in the transaction process, improve communications, and increase productivity.

If you are interested in simplifying your complex logistics challenges, call us today at **631-567-4100**, or visit us on the web at www.transportgistics.com







Trax

Total Transportation Spend Management - Freight Audit Transformed.









Trax 14500 N. Northsight Blvd, Ste 113 Scottsdale, AZ 85260 1-800-755-0110 sales@traxtech.com traxtech.com



rax is the global leader in Transportation Spend Management solutions. Combining industry leading cloud based applications with expert services, we are transforming traditional freight and parcel audit to help customers better manage and control their global transportation costs and drive enterprise-wide efficiency. With a global footprint spanning North America, Latin America, Asia and Europe, we deliver data based visibility and insights, higher savings and better control of transportation spend for shippers of all sizes.

Transportation Spend Management

At Trax our Total TSMSM platform is a purpose-built spend management solution for transportation; combining 20 years of best-in-class data management, industry defining rate management and cutting edge Transportation Spend Intelligence (TSI). Total TSMSM represents the next generation of freight and parcel audit driving the industry toward comprehensive transportation spend management. Finally delivering the capabilities shippers require to better manage and control their transportation costs.

Transportation Spend

Analytics can transform transportation cost data into an advantage for any shipper. Knowledge gained through analytics can eliminate the pain involved with managing raw transportation data and converting it into actionable intelligence—reducing the time required to take action.

Trax delivers transportation spend intelligence through our TSI solution suite, enabling shippers to analyze their transportation spending and answer key questions like "What happened?" "Why did it happen?" and "What can I do about it?" Whether it's our TSI Insights solution, which captures all spending and KPIs in a best-inclass business intelligence solution or our patent pending TSI Variance Analysis, which quickly lets you measure the changes in your spending and identify the root causes of those changes, TSI gives you control.

Why Trax

Trax delivers solutions that move beyond traditional freight and parcel audit. We enable shippers of all sizes to quickly gain the benefit of transportation spend management—allowing you to better manage and control one of your most significant and complex spend categories.



Trinity Logistics



Sarah Ruffcorn President

Mission Statement

Trinity Logistics delivers creative logistics solutions through a dynamic mix of human ingenuity and innovative technology, enriching the lives of those we serve.

> **Trinity Logistics** 50 Fallon Ave. Seaford, DE 19973

P: 302-262-8467

Corporate Contact Info Brittany Siegel Director of Marketing Email: Brittany.siegel@ trinitylogistics.com

Trinitylogistics.com





Trinity Logistics, a Burris Logistics Company, is a top 3PL providing a people-centric approach to freight solutions. Trinity's commitment to being different on purpose, whether it be through innovative supply chain solutions or outstanding customer service is what makes us stand out. Trinity has specialized in truckload, less-than-truckload, warehousing, managed transportation, intermodal, expedited, and international freight management solutions for over 40 years.

Trinity services food manufacturing, flatbed, chemical and other industries through offices in Delaware, Missouri, Minnesota, Florida, Texas, Maryland, Georgia, Iowa, and 100 Authorized Agent Offices.

Trinity's in-house team of developers help them provide best-in-class service through technology tools, including a customer portal, capacity tools, a proprietary TMS, and digital freight matching.

For more information about Trinity's freight services and how we can help your business, visit trinitylogistics.com.





Tucker Company Worldwide



Jeff Tucker CEO



Jim Tucker President and COO

Tucker Company Worldwide Affiliations

- TIA
- NITLTAPA
- TAPA
 SC&RA
- SC&RA
 NDTA
- NCBFAA
- QualifiedCarriers.com
- ISNetworld

Services We Offer:

Truckload

- Dry Van
- Temperature Control

Flatbed & Specialized

Project Management

- Product launches
- Managed LTL programs
- Inbound and outbound
- Freight management

Tucker Company Worldwide www.tuckerco.com

800-229-7780 info@tuckerco.com



THE MOST RESPECTED NAME IN NORTH AMERICAN FREIGHT TRANSPORTATION





e are Tucker Company Worldwide the oldest privately-held freight brokerage in North America. For nearly 60 years, we have been providing industry-leading logistics services and award-winning support to our customers.

We take great pride in moving high-touch, high-security freight in industries where reputation and track record are paramount.

We arrange just about anything, but difficulty is our specialty. So, whether your shipment is oversized, delicate, high-value, or hazardous, we're prepared to manage it with the utmost care – using carefully designed procedures to get the job done right.

Our Service Sets us Apart

The Tucker difference starts with our customer onboarding. We are accustomed to the rigorous operational and safety compliance standards required in the industries we serve, and tailor our services to you – providing unique modifications to our TMS that reflect your specific quality, security, and escalation needs.

We Only Work With the Best Carriers

We (literally) wrote the book on carrier selection, and collaborate with the best minds in safety, security, and risk management at USDOT and within the industry to ensure we're providing services and carriers who protect your cargo and brand.

We're Leading the Digital Tracking Revolution

We pair our tried-and-true tracking and tracing techniques with cutting-edge digital, GPS-based technology to offer near-time location data, better predictive arrival times, and deeper transportation insights. It's no wonder we're on-time more than 98% of the time!

From small and medium-sized businesses to large Fortune 500 companies—our customers choose Tucker because we're freight experts. Learn more about the Tucker difference at **tuckerco.com**.







U.S. Bank Global Transportation Payment Solutions



Jeff Pape Senior Vice President Head of Product & Marketing Global Transportation



We go the distance

No matter what role you play in managing a successful supply chain, you count on reliable partners and visibility into critical data to make informed decisions. Depend on the strength and experience of U.S. Bank to provide the payment integrity, efficiency and security only a bank can provide.

U.S. Bank Freight Payment

Get the reliability and visibility you need to make your supply chain a strategic advantage. U.S. Bank Freight Payment is a comprehensive solution designed to streamline freight invoice audit and payment processes at every mile through:

- 100% pre-payment audit to uncover savings
- Enhanced working capital while providing carriers timely, predictable payment
- Collaborative tools and dedicated customer service to reduce errors and resolve exceptions guickly
- Dynamic freight analytics tools and services that turn raw data into smart decisions

U.S. Bank Voyager® Fleet Program

Managing fleet expenses and payments can be a major challenge—especially if you don't have the right solutions. The Voyager Fleet Program enhances driver efficiency and reduces costs while supporting data integrity and preventing fraud and misuse.

We offer:

- **Convenience:** Pay for fuel and maintenance expenses at more than 320,000 locations nationwide.
- **Control:** Support fleet policies, budgeting, forecasting and auditing with streamlined data.
- **Cost savings:** Prevent fraud and misuse with automated controls, reporting and real-time alerts.
- **Customer service:** Available 24 hours a day, whether you're in the office or on the road.

Usbank

U.S. Bank Global Transportation Payment Solutions

usbpayment.com/ transportation-solutions 866-274-5898 CPSTransportation@ usbank.com







UTXL

Mark Hogan

Our Mission:

...place safety FIRST.

...pursue perfection.

...achieve excellence.







UTXL Corporate Office 12200 NW Ambassador Dr. Kansas City, MO

Direct Telephone: (816) 891-7770 Toll Free: (800) 351-2821 www.UTXL.com



eXcellence... ...eXpedited

Together, let's expedite excellence.

The best transportation brokers enhance safety and service, provide proactive communications with in-transit visibility, and help reduce supply chain costs. Shippers also rely on their most dependable brokers, such as UTXL, to support their core carrier group during surges and to back-haul their dedicated fleets.

How does a broker affect good service? Most of our customers' shipments have a high consequence of failure – bad, expensive things happen if we don't deliver on time. We cannot fail our customers or their supply chains. Our proven carrier vetting process plays a huge role in achieving our excellent service record. We strive to match, and often exceed our customers' selection standards that they use to select their direct core carriers.

As a result, UTXL utilizes fewer carriers than other large brokers. Even so, our extensive database of contract carriers includes more than 500 carriers that have been licensed and safely operating for over 25 years. These carriers have an average fleet size of 35 trucks and combined assets of over 17,500 trucks. Many can provide drop trailers for loading or unloading.

Can a broker really enhance safety? In our 20-year history, there has never been a single dollar charged to any of UTXL's extensive insurance policies or bonds. For the few cargo claims that have occurred, each one was processed to the complete satisfaction of our shippers.

For one of our long-time customers, we have arranged door-to-door transportation

of over 100,000 expedited, high-value truckloads - without a single cargo claim.

How can a resourceful broker provide responsive and dependable capacity? Small and medium-sized carriers are nimble and typically specialize in niche service lanes to get their drivers home (lower driver turnover) and their trucks maintained (fewer breakdowns). However, unlike large carriers, niche carriers have little or no sales support or TMS/EDI capabilities and are effectively "invisible" to most shippers.

A good broker efficiently connects this vast "invisible" capacity to the transportation marketplace by performing these necessary customer service activities for many carriers, as a seamless, single point of contact. Our comprehensive systems enforce compliance with all of our processes and send automated alerts if deviations occur. Management is engaged, and accessible around the clock.

For Van or Refrigerated Pricing (full trailer or <u>multi-stops</u>) visit www.UTXL.com or contact me anytime at: mhogan@UTXL.com and together, let's expedite excellence.



Vans & Reefers (teams too) Nationwide (24 x 7)



Verst



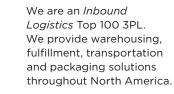
Paul T. Verst Chairman & CEO

Our Core Purpose:

To extend the expertise, capabilities and reach of our clients by providing logistics and packaging resources that relieve the need for operational investment, increasing speed to market and lowering costs.

Our Core Values:

Innovation Excellence Respect Safety Teamwork



Verst Provides a Broad Portfolio of Logistics Services

WAREHOUSING & DISTRIBUTION

- Inventory Management
- Reverse Logistics/Returns Management
- 21+ Dedicated & Multi-Client Locations
- Rail Served
- Automotive, Paper, Food & Beverage, Consumer Products
- Cross Docking
- (VMI) Vendor-Managed Inventory
- Value-Added Services
- Kitting
- Pick & Pack

FULFILLMENT

- Key Midwest Transportation Corridor
- 1 2 Day Ground to over 85% of U.S.
- Competitive Parcel & Freight Rates
- Shopping Cart Integration
- B2B & B2C
- Over 99% Order Accuracy
- Automated Systems
- Customized Billing & KPI Reporting
- Customer Web Portal
- Low IT Startup Cost

TRANSPORTATION SERVICES

- Brokerage
- ELD Compliant
- Full Truck Load
- Expedited Reefer Service
- Load Planning
- Electronic Load Tendering
- Freight Bill Audit & Payment
- Order-to-Delivery Visibility

DEDICATED TRANSPORTATION

- Dedicated Contract Carriage
- Experienced Drivers
- GPS Tracking
- GEO Fencing
- Time Critical & Window Deliveries



CONTRACT PACKAGING

- Technology-Leading Shrink Labeling
- Largest North American Shrink Sleeve Labeler
- Bundling and Kitting
- POP Displays
- High-Impact Graphics
- Custom Packaging

INTEGRATED LOGISTICS SERVICES

- Network Design
- Modal Optimization
- Event and Returns Management
- Private Fleet Analysis
- LTL Consolidation
- Customized Invoices
- Consulting Services

TECHNOLOGY

- Integrated TMS
- Advanced WMS Software
- Best-in-Class Application Suite
- Enterprise-Class Infrastructure
- Customer Web Portal
- 24 x 7 x 365 Support
- Full EDI Capabilities
- Voice-Activated Pick Technology

Verst Logistics

- Our business is . . .
 - an extension of your business

Verst Logistics

300 Shorland Drive

Walton, KY 41094

800-978-9307 verstlogistics.com



Family Values – Exceptional Performance

The Wagners developed the company on the principle that every customer is a big deal. Our team provides precise solutions to fit each customer's needs at the speed our customers require.

Wagner is driving forward by providing exceptional performance from startup as the industry continues to adapt to customer buying habits. We are eager to tackle your most complex supply chain challenges Whatever it is, whatever it takes – we say, "Bring It."

Wagner Logistics 1201 E. 12th Avenue N. Kansas City, MO 64116 www.wagnerlogistics.com

Sales & Marketing 816-293-3503



Honored 19 years in a row



The Wagner Way

Wagner Logistics started servicing customers' needs in 1946 and is now a premier, fullscale North American 3PL. For 74 years, Wagner has placed customer service at the cornerstone of our actions, we know every customer is a big deal. Our ability to listen and react in a swift, calculated manner gives our customers the peace of mind knowing Wagner will get it done. By investing in systems and innovative thinking, we deliver better results than our competitors.

The company remains dynamic by being nimble when competitors cannot. We began by servicing customers' transportation needs and now

offer contract warehousing, robust fulfillment, network analysis and top-notch transportation services. We

staff customer service heavily

in our business models to ensure a culture of providing exceptional performance to our customers. We are known for superior inventory management, sourcing competitively priced facilities and delivering freight better than other providers, even in toughest of freight markets.

Our customers guide our development into new geographic markets, technological advances and everchanging distribution challenges. Where do you want to be? We'll take you there!

Dynamic Transportation Services

Customers have trusted Wagner to deliver critical freight for over 70 years. Many companies offer freight solutions and only perform when it benefits their bottom line. We understand that when a promise is made, we must perform. That drive is the reason midsized to Fortune 100 companies bring thousands of shipments to our team. Wagner Logistics will work through the tough freight issues rather than just taking the low hanging fruit. We even haul freight to consignees that fine for late delivery because we know how to make it on time.

Wagner Logistics

We deploy assets when consistent volume demands consistent capacity. Our area of focus for our asset drivers is within a 100mile radius of our customers' operations, we can provide a complete freight management solution to fit your needs. On top of our world class freight solutions, we also have a phenomenal parcel program in place for all of your small shipment needs.

Contract Warehousing

We serve our customers with over 10 million square feet spanning from California to Florida. Customers rely on our expertise in network analysis and facility placement to consolidate operations and maximize savings. Did you know Wagner's CEO started out

his career as an

bring a solutions

focused mindset

when planning

or improving a current operation.

a new operation

engineer? We

to the table



Bring it.

Wagner understands how to transition your distribution operation when others are failing. We know how to take you into a new market with flawless execution. Our start-up team is fast, precise and knows how to avoid the road blocks. Coast-to-Coast, we have you covered.

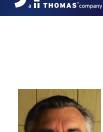
Fulfillment

Ecommerce has changed distribution and internet shopping has forever changed customer expectations. Wagner Logistics opened our fulfillment operation over 25 vears ago. Wagner worked out the kinks years ago and was ready when the ecommerce changes hit. Our strategically located fulfillment operations in the heartland allow our customers to reach over 86% of the continental US in 2 days with ease. Now more than ever customers are ordering products online. Wagner can provide you a multichannel ecommerce fulfillment center so you can focus on your core competencies while Wagner handles your fulfillment.

If there is anything we can do for you, as we say at Wagner...Bring It!



Wen-Parker Logistics





John Singleton Chairman & Chief Executive Officer

Mission Statement

Our mission is to provide customized global supply chain solutions that deliver value, innovation, and world-class service.

US Offices

- New York
- Los Angeles
- Miami
- Louisville
- Columbus
- Columbus (Warehouse)
- Detroit (Sales)
- Dallas (Sales)
- Boston (Sales)





Wen-Parker Logistics, Inc. 1975 Linden Boulevard Suite 420 Elmont, NY 11003 888-978-7817 info@wen-parker.com www.wen-parker.com

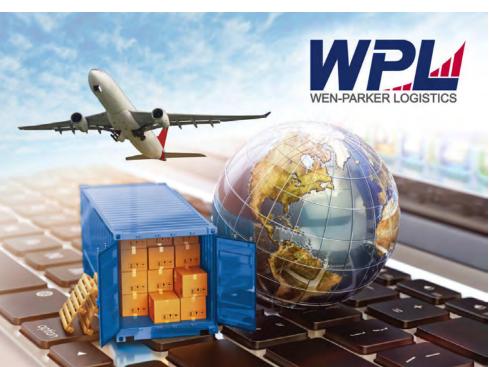


en-Parker Logistics operates a total of 27 offices worldwide, supplemented by a robust global network of agent partners in over 100 key sourcing and consumer markets across the globe. Since our inception, Wen-Parker Logistics has built a strong reputation for superior performance, reliability and innovation within both the apparel and footwear industries. Our current list of global clients includes several of the world's best-selling and most popular labels and brand names that are known worldwide. In 2019, for the 4th consecutive year, Wen-Parker Logistics was listed on the Great Supply Chain Partner list published by Supply Chain Brain magazine.

Having such diverse and long-term client relationships has enabled Wen-Parker Logistics to develop the experience and expertise necessary to offer an extensive menu of value-added services specific for fashion and retail that goes far beyond standard air freight and ocean freight forwarding. While we are the go-to logistics partner for apparel and footwear brands, we also have significant experience with global companies in key vertical markets including but not limited to: Cosmetics, Consumer Electronics, Auto Parts and Accessories, and Medical Devices and Equipment.

Whether it is opening a new warehouse and office facility in Los Angeles or a new sales office in Dallas, Wen-Parker Logistics is always looking for new ways to enhance our business partners' revenue and competitive edge by offering the most optimal services in the industry. Equipped with extensive industry experience and supported by leading-edge information technology and business tools, Wen-Parker Logistics provides a customer experience unlike any other within the transportation and logistics industry.







Werner Enterprises/Werner Logistics



Derek Leathers President & CEO

Purpose Statement

To deliver world-class supply chain solutions to the global marketplace responsibly and safely while exceeding the expectations of our customers, shareholders and associates.

Werner Enterprises

14507 Frontier Rd. Omaha, NE 68138 800.228.2240 www.werner.com





Average Is for Other People

Werner Enterprises, Inc. was founded in 1956 and has evolved from a onetruck operation to the full-service premier transportation and logistics company it is today. Werner is among the five largest truckload carriers in the United States. Through our extensive network, we maintain coverage throughout North America, Asia, Europe, South America, Africa and Australia.

With its global headquarters located in Omaha, Nebraska, Werner also operates offices in the United States, Canada, Mexico and China. Our comprehensive solutions are supported by leading-edge technology, top transportation professionals and an extensive global network. Our highly trained and experienced professionals combined with our dedication to advancements in technology produce unmatched customer service.

Our diversified portfolio of transportation services includes oneway van, dedicated, cross-border Mexico and Canada, expedited, temperature controlled, freight management, brokerage, intermodal, flatbed, ocean and air, global freight forwarding, final mile and home delivery.

Werner Logistics is a comprehensive Top 20 logistics provider and key component of the company's portfolio of transportation services solutions. Werner Logistics generates over \$500 million of revenues annually with operations in over 150 countries.

A substantial focus has been placed on our 5T's initiative. This initiative includes

investments in trucks, trailers, talent, terminals and technology. While the average age of trucks in the industry is over five years, Werner's average truck age is 1.8 years. A newer fleet means less maintenance downtime and more on-time delivery. The 5T's initiative is designed to maintain Werner's standard of best-inclass well into the future.

Committed to conservation and sustainability, we have saved more than 275 million gallons of fuel and reduced the company's carbon footprint by more than 3 million tons since 2007.

Werner also developed the first truck driver apprenticeship program in the industry approved by the Department of Labor and the Department of Veterans Affairs. We are a proud supporter of military veterans and veteran spouses, who comprise approximately 20 percent of the company's workforce.

Beyond the Assets

With more than 60 years in business, Werner maintains a strong financial condition with low debt. Werner has consistently produced profitable financial results, a solid financial position and is publicly traded on NASDAQ under the symbol WERN.







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infor supply chain virtual summit

Infor Supply Chain Virtual Summit addresses how to build connected, intelligent and responsive supply chains

On Thursday, Feb. 6, Infor will host an online Supply Chain Virtual Summit, designed to help organizations accelerate their efforts to build connected, intelligent and responsive supply chains.

In 2020, supply chain executives are intent on becoming more data-driven to better sense and respond to customer needs. The Virtual Summit offers an opportunity for supply chain, logistics and procurement leaders to see and understand how end-to-end connectivity can break down silos and enable free-flowing data to be optimized for a faster coordinated response, including predictive and prescriptive action.

The Virtual Summit, sponsored by Accenture and AWS, is scheduled for 9:00 AM to 4:00 PM EST, on February 6, during which Infor and industry experts and leading global companies – including **Allport Cargo, DB Schenker, Deckers Brands, PVH** and **UPS** – will discuss how to optimize and transform supply chains.

The online event will feature six keynote sessions, six virtual booths, where participants can explore the latest supply chain technologies and interact with booth staff members; access to exclusive, downloadable content; and opportunities to chat with other attendees. 66 Modern, digitally enabled supply chains must operate as intelligent business networks that connect systems, processes and partners. This not only improves visibility, but it also helps establish a more responsive supply chain that leverage the cloud, automation and analytics to help organizations become more customer-centric. "

HEIDI BENKO

Vice President of Solution Strategy and Marketing for Infor Supply Chain Management

To help organizations take the digital transformation of their supply chains to the next level, the Infor Supply Chain Virtual Summit will address how to:

- Build a connected, intelligent and responsive supply chain
- Create an intelligent, customer-centric supply chain
- Transform the warehouse and increase operation efficiency
- Improve working capital and drive sustainable business growth
- Improve customer service and performance with automation, visibility and assurance of supply
- Leverage a multi-enterprise network to optimize logistics management

REGISTER NOW -

Pages.infor.com/VirtualSummit

The Virtual Summit also will be available, on demand, following the live event.





ECHO). 15 Transportation Simplified[™]

Echo Global Logistics is excited to announce we are celebrating our 15th anniversary this year! As Echo honors this milestone, we attribute our success to the excellent relationships we have with our clients and carrier partners. We wouldn't be where we are today without them.

What began in 2005 as a small startup with just 15 employees and cutting-edge technology, has grown into a publicly-traded Fortune 1000 company with a team of over 2,300 logistics professionals. Today, Echo is proud to provide freight brokerage and managed transportation solutions to more than 35,000 clients and manage 16,000 shipments a day via our network of 50,000 carriers, all supported by our proprietary technology.

Our client and carrier relationships have been critical to our growth, and we are honored to have been voted the #13PL in the *Inbound Logistics* Top 10 3PL Excellence Awards three years in a row. Thank you for your ongoing support and we look forward to the future of "simplifying transportation management" together.

Dave Menzel President and COO

Doug Waggoner Chairman of the Board and CEO



ECHO.COM 800.354.7993

Managed Transportation • Truckload • Partial Truckload • LTL • Intermodal • Expedited • International Air & Ocean