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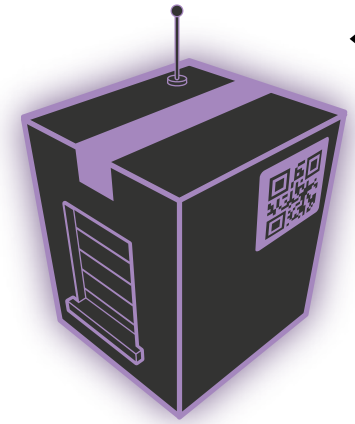


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ONLINE EXCLUSIVES

Seven Tips for Finding the Right Chinese Partner bit.ly/ChinesePartner

Daniel Cser, Owner, ICAT Logistics

China is a major trading partner for the United States and the relationship is key for both countries. Use these tips to find a partner in China that is right for your company.

Improving Fleet Safety with On-Board Video bit.ly/On-BoardVideo

Adam Kahn, Senior Director of Product Marketing, SmartDrive Systems

Video-based safety solutions offer a true view of what's happening on the road. Discover how an on-board video solution can help fleet managers review driver performance and improve fleet safety.

How to Make Ship Arrival Analytics and Predictions More Precise bit.ly/PrecisePredictions

Tyson Leal, Director, Industry Sales and Business Development, TransVoyant

Predicting the arrival of ocean vessels with certainty has been a consistent struggle. Find out how services utilizing an automatic tracking system can provide analytics that enable companies to more accurately predict ship arrival times.

TRUCKING RESOURCES

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Trucking Request for Proposal bit.ly/ILTruckingRFP

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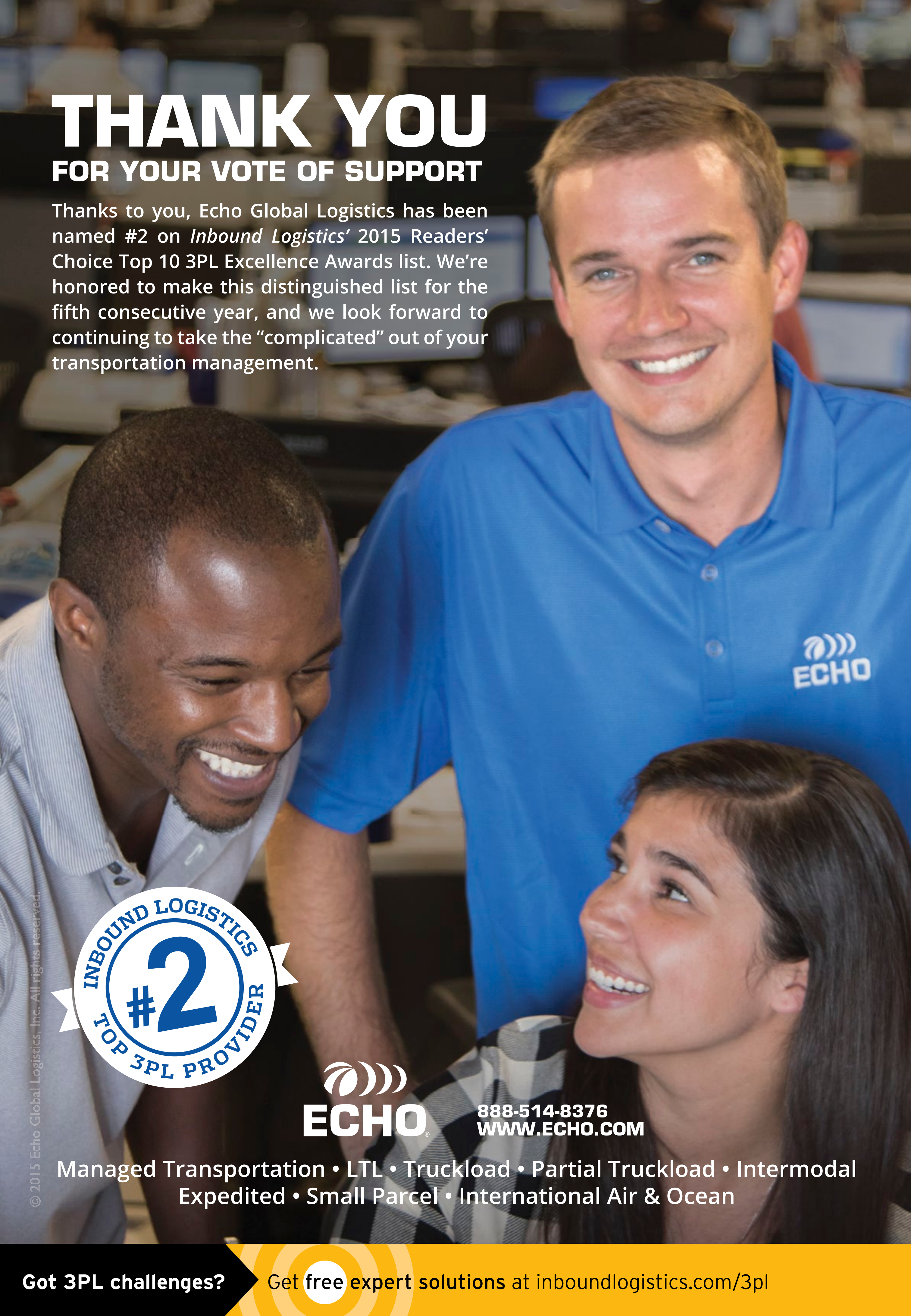
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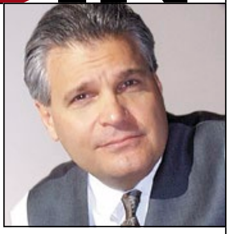

by Keith Biondo | **Publisher**

XPO Goes Long With Con-way Play

Merger and acquisition activity in the transportation and logistics sector has been fast and furious over the past few months. Still, it's hard to imagine that UPS's acquisition of Coyote Logistics ($1.8 billion) and Infor's GT Nexus move ($675 million) have become little more than sidebars to this summer's blockbuster feature—XPO Logistics' bookended $3 billion-plus buys.

The Con-way acquisition in early September 2015 sent a shock wave through the supply chain sector and The Street—but not because XPO already made a big splash in June when it finalized a deal to swallow French 3PL Norbert Dentressangle for $3.5 billion. Rather, CEO Brad Jacobs' decision to acquire assets might be a tipping point that triggers even more M&A activity.

Since XPO emerged on the scene in 2011, it has staunchly maintained an asset-light profile. Then, over one summer night, it assumed the mantle of second-largest LTL carrier in the United States—in addition to already being a top global 3PL.

The move raises a lot of questions: Why did XPO suddenly decide to get into the trucking business? How will it integrate Con-way Freight, Con-way Truckload, and Menlo Logistics into its existing portfolio? What's the end game?

Jacobs fielded these inquiries, and more, during a recent conference call with investors to talk about the acquisition. A few years ago, XPO tried to acquire Menlo Logistics, he acknowledged, but the deal fell through. At the time, XPO had no interest in Con-way's assets. That changed after the Norbert Dentressangle move.

Visiting with XPO's new European customer base over the summer gave Jacobs a greater appreciation for capacity. Until you own assets, "you're not sitting at the adult table," he noted.

Not only does XPO now have a bigger seat, it's sitting near the head of the table.

"Our major long-term view is that capacity is ultimately going to get tighter for all the obvious reasons —driver shortage, driver demographics, and government regulations," Jacobs explained. "What do you do if you're going into a market where you see something becoming short? You go long."

Wall Street skeptics have pounced, suggesting the Con-way and Norbert Dentressangle acquisitions are happening too fast, too soon. But Jacobs is equally quick to remind investors that he has successfully managed similar integrations, with considerable asset bases, while at the helm of United Rentals and United Waste Systems. He suggests that controlling capacity as the market tightens is a competitive advantage.

Even with XPO's new configuration, two-thirds of its revenue will still come from the non-asset side of the business. Jacobs likes that balance. "I like the street cred we get with major shippers," he added.

For shippers, the writing is on the wall. Capacity is tightening. Consolidation will continue. At some point in the not-too-distant future, transportation costs will rise.

Says Jacobs: "We're going to skate to where the puck is going, not where it is." ■

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Nice article in your July 2015 issue (*Overcoming LTL Shipping Challenges*: bit.ly/LTLchallenge), but it didn't even scratch the surface. I would like to add a few more tips, as the retail world has changed over the years.

Determining which carrier best services your customers can help you avoid the biggest problem that the article didn't mention: chargebacks. So many retailers charge for everything – from misplaced labels to late deliveries.

You can incur chargebacks by using the wrong carrier to the customer; some don't provide extra services or aren't willing to work with the customer. And, by using the wrong carrier, you may get billed extra charges such as detention.

Some consultants have no knowledge of chargebacks. They put out a bid to a large number of carriers, ignoring the actual customer and compressing the total tonnage from the warehouse to a destination ZIP code or state.

One more tip: Don't let carriers cherry-pick your freight. Letting them take only the easy freight will make it 10 times harder for you to move your less desirable freight.

Rich Foley, Logistics Manager,
SDI Technologies

Inbound Logistics
26 AUG 2015
Avoid these 10 common packaging mistakes. What other mistakes have you seen? bit.ly/packingfails

Chad Gove
Hands down, the triangle-configuration flat-screen boxes Amazon tested one lovely holiday season (2011-2012, not to be seen again, thankfully!). TVs free-floated, and slammed around inside, not stackable. Trailerloads arrived inbound from its fulfillment centers stacked, packed, and collapsing.

Inbound Logistics
3 SEPT 2015
How does a warehouse manager transform a group of people with different backgrounds, outlooks, and abilities into a high-powered workforce? *The Changing Face of the Warehouse Workforce*: bit.ly/DCworkforce

Michael McConaughy
Interesting article because I have managed Arabic (Omani), Indian, Sri Lankan, and Filipino warehouse staff. Just learning how to greet them in their own languages went a long way in my working relationship with them.

Hot Topics | *IL* articles getting the most impressions on LinkedIn: Rise of the Machines: How Self-Driving Trucks Will Alter the Supply Chain: bit.ly/1UFbQyp • How Location Decisions Impact a Lean Strategy: bit.ly/1FA6KqS • Prepare for Impact: bit.ly/1O4dGEP • Special Deliveries: Moving the Gargantuan, the Precious, and the Peculiar: bit.ly/1XQTF82 • 10 Trends in Cold Chain Logistics: bit.ly/1iAn99V


Reddaway
Reddaway Knows California.

Getting the Most from Professional Associations

Membership in a supply chain or logistics association can be significant to your professional development. Actively participating helps advance career growth and offers continuous learning. Dino Moler, executive vice president of client solutions for third-party logistics provider LeSaint Logistics, member of several logistics and supply chain organizations, and president of the board of directors for the Transportation Marketing and Sales Association, offers the following advice to get the most from association memberships.

1 **Learn everywhere.** Learning opportunities include conferences, webcasts, best practices, and workshops. Learning from members offers another great opportunity. Listen closely to members' varied perspectives, experiences, successes, and failures.

2 **Teach others.** What do you do extraordinarily well? Do you succeed with social media or know a way to bring customers value, save them money, and still make a profit? Association members would benefit by learning new ideas and solutions from you.

3 **Share experiences.** If you would rather not teach, or you dislike public speaking, you can still share your experiences with others one-on-one or in small groups. Professional associations, even though many times composed of competitors, foster a spirit of sharing.

4 **Network regularly.** Membership offers opportunities to build and nurture relationships. You can get to know people from all facets of the supply chain sector including members, vendors, partners, event speakers, and the media. This network is helpful when you need to hire someone great or if you are looking for a career change.

5 **Develop a trusted group of peers.** This goes beyond basic networking. Developing career-long relationships with people you can trust helps when you're facing a logistics challenge or need to share some new ideas confidentially.

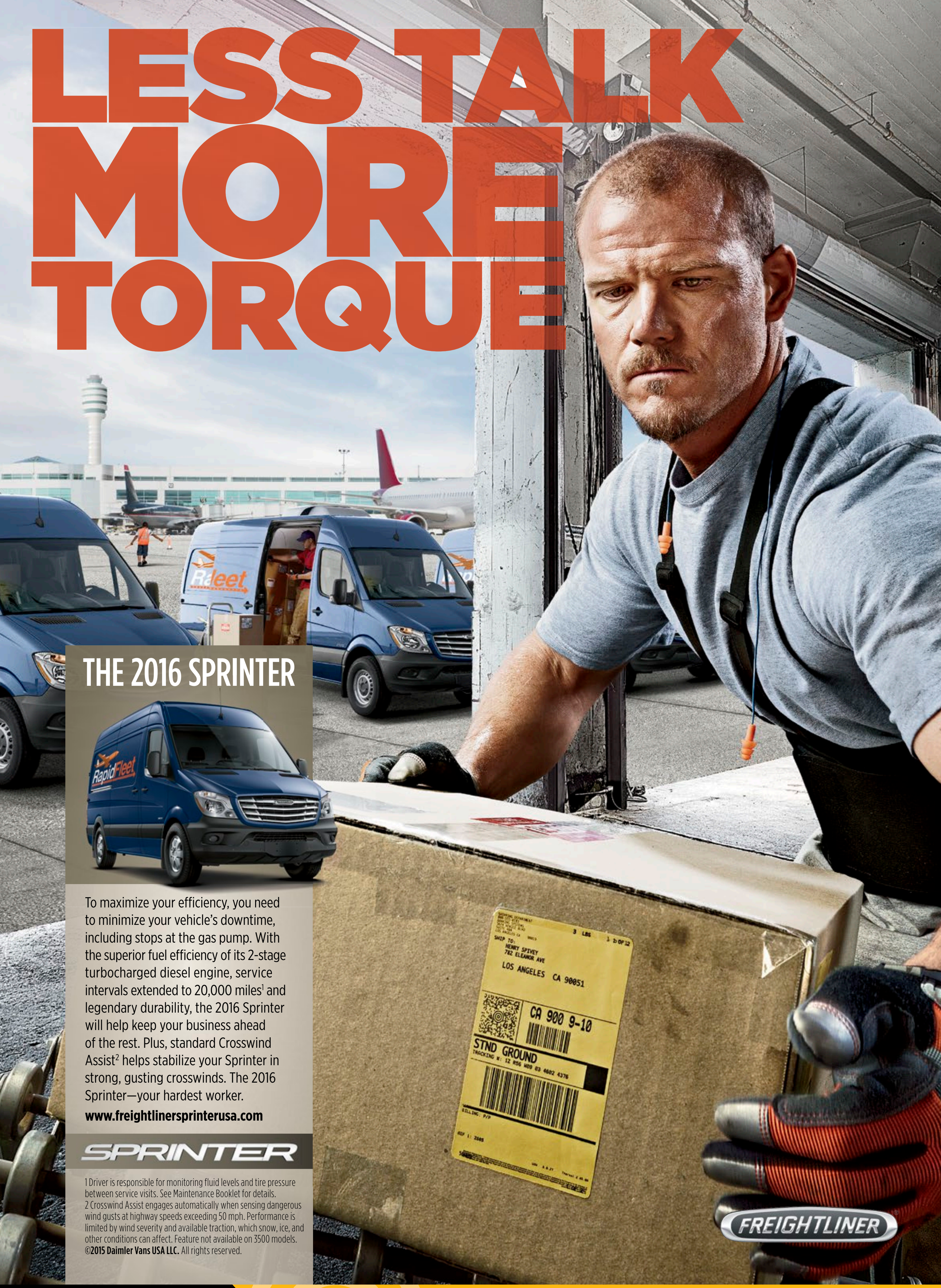
6 **Get involved.** Professional associations offer plenty of opportunities to volunteer, participate in events, work on committees, or even join the board of directors. Most associations are volunteer-led so your participation is essential.

7 **Encourage others to join.** Help your association grow by encouraging others to join and vendor partners to participate and support it. It is everyone's responsibility to help the association thrive.

8 **Mentor members.** Are you an influential industry leader? Many people in your association are new in their roles or new to the industry, and they need you to help them become successful. Are you young or new to the logistics sector? Find people you admire and learn from them. You can return the favor later in your career.

9 **Embrace change.** Step up and help your association make positive changes if the agenda starts to drift from the core. Conversely, don't be opposed to change suggested by others just because it's different than the way you did things in the past. Healthy associations evolve.

10 **Enjoy events.** Most associations plan social events throughout the year. Go ahead and enjoy. It's good for your state of mind. There is plenty of work to do in any volunteer group so don't feel guilty when it's time to kick back and have some fun. ■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R E A D E R
PROFILE

as told to Merrill Douglas

Jeff Larson is director of distribution engineering analysis at Tiffany & Co. in Parsippany, N.J. He joined Tiffany in 2001 and has held his current position since 2009.

RESPONSIBILITIES

Process improvement, distribution strategy, user testing and integration for the warehouse management system, and some procurement activities.

EXPERIENCE

Process engineer, manager-engineering analysis, Tiffany & Co.

EDUCATION

BS, industrial and systems engineering, Rutgers University, New Brunswick, N.J., 2001; executive masters in international logistics and supply chain strategy (EMIL-SCS), Georgia Institute of Technology, 2015.

Jeff Larson: A Gem of a Job

I DIDN'T REALIZE IT AT FIRST, BUT LOGISTICS HAS ALWAYS been part of who I am, going back to my summer work as a landscaper. I was good at finding the quickest way to travel between lawns, and it was rewarding to know I could get in a couple more lawns than planned. When I started learning about industrial engineering in college, I realized that's just the way my brain works: I'm wired to enjoy logistics and process improvement.

I started my career with Tiffany as an intern and have never looked back. I've stayed because I continue to feel challenged and engaged.

In my first job with Tiffany, I provided support for our new distribution center (DC) in Whippany, N.J. I was responsible for forecasting, equipment selection, layout design, work design, and ergonomics.

When you think about Tiffany's fine jewelry and other high-end products, you might expect our operations to differ significantly from a typical DC. Certainly we place a greater emphasis on security, quality, and sustainability. We have export compliance requirements for some of our retail markets. We offer custom services for our direct-to-consumer channel. And before we ship a blue Tiffany box, we apply a hand-tied bow. Yet, at the core, we still receive product, put it away, pick, pack, and ship it, just as you would in any other facility.

Over the years, I've been exposed to many divisions of the company, including international operations, manufacturing, merchandising, and retail. Tiffany operates a sophisticated, vertically integrated supply chain. However, as of late, we generate the majority of our revenue from

The Big Questions

What's the best work-related advice you ever received?
Never email someone when you can make a phone call; never call someone when you can have an in-person conversation.

What have you read lately that you recommend?
I have a toddler and a newborn, so I would recommend *Good-Night, Owl!* It works like a charm: it puts my toddler right to sleep.

If you could go back to school for fun or personal enrichment, what would you study?
How to pilot a helicopter.

What's the most unusual thing on your desk?
A 10-inch-wide rubber band ball that I found during an assessment at one of our operations. It reaffirms the extent people will go to when they have idle hands, and reminds me there are always opportunities for improvement.

markets outside the United States. It now makes sense to think about evolving our distribution strategy to better support international growth. I'm charged with creating a roadmap for that strategy, and identifying the implications and benefits to our supply chain and company at large.

That's why I recently earned an executive masters in international logistics and supply chain strategy from Georgia Institute of Technology. The program gave me a chance to visit logistics operations all over the world, and observe their management styles, workforce challenges, and infrastructure issues.

I currently function as an internal consultant for Tiffany. My home is within distribution, but I often work with other parts of the company. I'm kind of a Swiss Army knife.

The opportunity to partner with Tiffany's international locations and help improve their operations over the years has been exciting. It makes me proud when the local management team embraces the changes we've implemented and sustains the benefits. That's what happened in 2007, for example, when I worked with our direct-to-consumer fulfillment operation in the United Kingdom. We executed changes that improved fulfillment rates and turn times, bringing the success level up to about 98 percent. The operation has maintained that performance, and made further improvements. Being part of that transformation was very rewarding. ■

NOTED

THE SUPPLY CHAIN IN BRIEF

GREEN SEEDS

▶ **General Mills**, headquartered in Minneapolis (*photo, right*), committed to reducing absolute greenhouse gas emissions by 28 percent across its entire value chain—from farm to fork to landfill—over the next 10 years. The food manufacturer based this goal on the level of emission reductions—50 to 70 percent in absolute emissions by 2050—that scientific consensus suggests is necessary to sustain the health of the planet.

DHL Express added more than 200 new vehicles to its U.S. fleet in 2015, reducing the average vehicle age from 6.7 years in 2012 to the current 3.6 years. The company also expanded its liquid propane gas vehicles in Detroit, Chicago, and Elizabeth, N.J., and introduced the next generation of fully electric vehicles in New York and San Francisco.

Automotive manufacturer Nissan recognized **Union Pacific Railroad** with a Cost Leadership Award for implementing rail network efficiencies, and **Union Pacific Distribution Services** with a Zero-Emission Leadership Award for strengthening Nissan's service parts distribution network and reducing its carbon footprint.

m&a

▼ **Kalitta Charters** acquired the operational assets of cargo and charter company **AirNet**, and will provide financial and operational backing. With a fleet of Beechcraft Barons and Bombardier Learjets, AirNet offers specialized services for transporting radiopharmaceuticals and nuclear medicine.

Shipping and logistics company **Magnate Worldwide**, a partnership between CIVC Partners and Magnate Capital Partners, acquired **TrumpCard**, a provider of premium logistics services for the healthcare, aerospace, entertainment, and electronics industries, among others.

Dicom Transportation Group, a transportation services provider, acquired **Extra Express** to add final-mile capabilities and distribution points in the western United States, including California, Colorado, and Nevada.

UP THE CHAIN

Discount retailer Big Lots appointed Chief Financial Officer **Timothy A. Johnson** to lead its global logistics operations. In addition to his role as CFO, Johnson will manage the company's five U.S. distribution centers, and worldwide logistics as executive vice president and chief administrative officer.

Nico Buchholz was named senior vice president and chief procurement officer at aircraft and train manufacturer Bombardier. In this new position, Buchholz leads supply chain activities and manages supplier relations across the global value chain, ensuring all goods and services purchased by Bombardier's four business segments meet quality, on-time delivery, and cost-efficiency standards.

SHOVEL READY

▶ **Dermody Properties**, a national industrial development and operating company, in a joint venture with **Hillwood Investment Properties**, is set to develop an 898,560-square-foot facility for **Wayfair**, an online destination for home furnishings and décor. The facility, known as LogistiCenter at 275 (*photo, right*), will be located on a 52-acre site in Erlanger, Ky., adjacent to the Cincinnati/Northern Kentucky International Airport. Construction is expected to be complete in the second quarter of 2016.

Photo courtesy of Paul Hemmer Co.

Menlo Logistics, global logistics and supply chain management subsidiary of Con-way, signed a build-to-suit agreement with global industrial real estate developer **Prologis** for a new 750,000-square-foot-plus regional logistics facility in Eindhoven, the Netherlands. The facility will be located adjacent to the A2/N2 Eindhoven ring road, which offers direct access to Belgium, Germany, and Amsterdam. Construction is scheduled for completion in the first quarter of 2016.

GOOD WORKS

▼ **The UPS Foundation** delivered nearly 100,000 pounds of American Red Cross relief supplies to help more than 50,000 residents of the Commonwealth of Northern Mariana Islands affected by Typhoon Soudelor and Tropical Storm Goni.

Refrigerated transport solutions provider **Carrier Transicold** contributed a Supra truck refrigeration unit to Foodshare, an organization that fights hunger. Foodshare uses the unit on one of its mobile trucks.

Hunt Transportation, an operating division of Crete Carrier Corporation, awarded Freightliner Cascadia trucks to five company drivers who are veterans of the U.S. Armed Forces. With this addition, the company's Patriot Fleet now consists of 20 trucks.

recognition

▲ **Dayton Freight Lines**, a provider of regional LTL transportation services, was selected as the **2015 LTL Regional Carrier of the Year** by Ryder Logistics. Selection was based on metrics such as on-time service, claims performance, customer service, technology, economic value, and innovation.

CEVA Logistics, a supply chain management company, received the **2014 Annual Partner Award** from Huawei Technologies USA. The award recognizes exceptional performance by a supplier partner.

Avnet Electronics Marketing received a **Total Cost of Ownership Supplier Award** from Celestica, an end-to-end product lifecycle solutions provider. Celestica recognized Avnet as Best Distributor Partner through the awards program.

◀ **Joe Cowan**, president and CEO of business software solutions provider Epicor Software Corporation, was selected as a Gold Stevie Award recipient in the category of **Executive of the Year** in the 2015 International Business Awards. The 12th annual awards program recognized Cowan for driving business transformation.

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Eatsa uses technology to reinvent fast food. Customers order on an in-store iPad or on their phone, and the made-to-order bowl quickly appears in a personalized cubby. There is no cashier and no line.

Rising Labor Costs Eat Into Fast Food Supply Chains

by Joseph O'Reilly

When New York State's wage board voted to raise minimum pay to $15 in July 2015, it set tails wagging around the country. The wage hike, which will be phased in over the next three years upon approval by the state's labor commissioner, only applies to fast food chains with more than 30 locations nationwide. How the N.Y. State Department of Labor defines "fast food" is open to interpretation. But it's an important consideration, especially as food purveyors adapt to a consumer base that increasingly expects more—on demand.

N.Y. Governor Cuomo's latest social welfare gambit will have a significant impact on small business owners—notably entrepreneurial franchisees.

The governor encountered similar inertia from economic development and business interests in late 2014 when he shared plans to reinvent JFK International Airport by diverting freight traffic to Westchester County.

With regards to hiking pay, New York is not alone. Other states have raised minimum wage to float with inflation. Los Angeles, Seattle, San Francisco, and Chicago have passed similar measures peaking at $15. In urban areas, where the cost of living is more expensive, there is greater rationale for paying higher wages. But Cuomo's largess includes the entire state.

A higher wage at McDonald's, for example, means smaller businesses across all retail sectors will have a more difficult time competing for labor. That adds cost. And upstate New York's economy is far different than the five boroughs of New York City. A 70-percent increase in hourly pay for low-skill labor will likely curb economic development and expansion in less densely populated areas.

Labor on the Line

Fast food companies operate on razor-thin margins. They have always been hyper-sensitive to price pressures, whether it's macroeconomic trends that dictate consumption patterns or avian bird flu, which is raising poultry and egg prices. Labor is another important line on the ledger.

Consider the fast food industry workforce. Across the United States, operators employ 2.4 million wait staffers, nearly three million cooks and food preparers, and 3.3 million cashiers, according to a recent *Washington Post* article. More telling, 30 percent of the restaurant industry's costs come from salaries.

Not surprisingly, companies are scaling back staff. The average number of employees at fast food restaurants fell by fewer than two people over the past decade, according to market research company IBISWorld.

Automation is inevitable. It's hard not to think that the Internet, touchscreens, and robots will eventually replace fast food cashiers in much the same way banks and grocery stores have adapted to the technology. In some places, it's already happening.

Chipotle allows consumers to click and collect meals at their convenience; Dominos' online ordering system prioritizes customization; McDonald's and Panera are testing self-ordering kiosks.

Perhaps the most avant-garde example is Eatsa, a San Francisco-based fast food restaurant that serves up bowls of Andean cuisine without any human interaction. There is no cashier or counter. Customers simply place their order on a touchscreen, then wait for robots to deliver the meal to unique cubbyholes for pickup.

New York State's progressive labor approach may be a tipping point for automation in the fast food industry. It's already happening in the supply chain at the warehouse level. But price pressures are forcing change at the counter as well. Governor Cuomo and the state wage board are betting the odds that raising wages is more important that expanding job growth.

The problem is, policy can't keep pace with technology.

Total Recall

Stakeholders up and down the food supply chain are anxiously awaiting the Food Safety Modernization Act's (FSMA) final rules of engagement. A rash of highly publicized food recalls catalyzed President Obama's decision to revisit food safety legislation in 2011. Reform can't come soon enough, suggests new research from Stericycle Expert Solutions.

Consumer preference for organic food products is driving an increase in healthy product recalls, creating complexities for manufacturers, regulators, and consumers, according to the Indianapolis-based recall solutions specialist.

Seventy percent of consumers believe a food item is safer, more nutritious, or of higher quality if it is labeled as organic. But as consumer awareness of and demand for healthier foods continue to grow, recalls are occurring more frequently.

More than 64 percent of food recalls have been related to healthy products since 2012, according to Stericycle's data. This trend continued to manifest itself in the second quarter of 2015. Sixty-five percent of recall events were related to healthy food, with listeria contamination and labeling issues among the chief drivers.

"The trend shows no sign of slowing, and companies are looking for ways to expand into this high-growth sector," explains Kevin Pollack, vice president, Stericycle. "For example, leading food manufacturers have reconfigured their products to cater to the health-conscious consumer. In other industries, companies that focus on eco-friendly products are experiencing record success."

Government regulation and consumer awareness will also force the issue. Growing supply chain transparency, mandated traceability requirements, and social media hold food companies accountable.

"In order to maintain compliance, prevent financial and reputational damage, and protect consumers, it's essential that companies review and revise their recall plans regularly," says Pollack.

Trucks, Rails Weight It Out

The battle over truck weight restrictions has become a contentious regulatory issue, pitting railroads and trucking companies against one another. The crux of the matter is whether states or the federal government should raise the capacity threshold for over-the-road interstate commerce.

In June 2015, the U.S. Department of Transportation released its *Comprehensive Truck Size and Weight Limits* study, which was mandated under the provisions of the 2012 MAP-21 highway bill. The findings, and reactions from both industry and the public, have been mixed.

In summary, the study failed to deliver any definitive answer due to insufficient data — i.e., the lack of descriptive information regarding trailer weights in crash reports; and that the status quo was preferable to reform. Absent any directive, the verdict has been widely viewed as a win for those that oppose increasing weight limits.

On the other hand, pro-truck interests point to some of the report's conclusions as justification for further study. Notably, six-axle trucks can safely weigh up to 91,000 pounds while yielding significant truckload reductions, pavement wear savings, and environmental efficiency benefits. Likewise, more productive trucks reduce congestion costs, fuel costs, and carbon emissions.

This empirical evidence led Rep. Reid Ribble (R-Wis.) to subsequently introduce the Safe, Flexible, and Efficient Trucking Act to the House of Representatives in early September 2015. Specifically, the legislation would allow states to increase the gross vehicle weight limit on commercial trucks if they are properly equipped with six axles and meet the same safety standards as trucks currently allowed on interstates.

The new move has been well received by heavy over-the-road users, such as farmers. The dairy industry, for example, relies on commercial trucks to get milk from the farm to plants, and to move dairy foods from the plants to grocery shelves across the country. Because the products are perishable, they must move quickly and efficiently.

"The current patchwork of varying maximum weights compels dairy marketers to transport partially empty loads of milk," says Jim Mulhern, president and CEO of the National Milk Producers Federation. "This uses more fuel, creates more congestion, and increases the costs of maintaining roads. Common sense changes like those included in the Safe Trucking Act will improve the efficiency and sustainability of the U.S. dairy industry."

Asset vs. Non-Asset: Does It Still Matter?

Industry discussion has long centered on what type of transportation service provider gives shippers an edge: a partner that owns assets or a non-asset-based provider that employs carriers.

Since deregulation allowed brokers and domestic freight forwarders to enter the transportation service arena, the advantages of both have been closely examined. Should shippers insist on dealing with an asset-based provider that has the necessary means to cover tendered loads? Should they partner with a non-asset-based provider with many carriers under contract that could supply more capacity? Or is a mixture of both the optimal solution?

"It depends on where the shipper feels more comfortable, and who can provide the necessary services," says Robert Voltmann, president and CEO, Transportation Intermediaries Association, an organization representing both asset- and non-asset-based third-party logistics (3PL) members.

Most shippers partner with more than one provider, according to *Inbound Logistics*' 3PL Perspectives market research report. The majority of shipper respondents (72 percent) use more than one 3PL, while only 28 percent have formed an exclusive partnership.

Brokerage Stigma Fades

The early days of brokerage were problematic and misconceptions about the sector rampant, as some practices at that time were harmful to the broker or the carrier. That has changed drastically since the 1990s, as both brokers and carriers realized they needed to revise how they worked with each other to their mutual benefit.

After 2000, the freight brokerage industry exploded with the rise of the Internet. When the economy tanked in 2008, and capacity softened, many shippers gravitated to brokers to cost-compare lanes and rates.

Signed into law in July 2012, the Moving Ahead for Progress in the 21st Century Act (MAP-21) clarified motor carrier brokerage operations, and raised the minimum bond for brokers from $10,000 to $75,000.

"We are entering a dynamic period for 3PLs and brokers; the stigma of the past is gone," says Jason England, president of non-asset-based transportation provider England Logistics, based in Salt Lake City.

In 2015, the line between asset-based and non-asset-based is less distinct. In fact, 43 percent of 3PL respondents consider themselves as both, according to *Inbound Logistics*' 3PL Perspectives report. Meanwhile, 46 percent identify themselves as non-asset based, compared to 11 percent as asset-based. Some of the largest transportation service providers are non-asset-based, with revenue in the same category as the largest asset-based truckers. Most motor carriers now have a brokerage division that generates significant revenue.

"There is a place in the transportation arena for both asset- and non-asset-based providers, and brokers need the assets. Our firm made a conscious decision not

Check Your Sources

Global uncertainty gives shippers even more cause to reconsider their offshore strategies, according to new research by Alix Partners.

Thirty-two percent of all surveyed executives and 40 percent of those domiciled in North America report that their companies have recently relocated manufacturing production closer to demand, or are in the process of doing so.

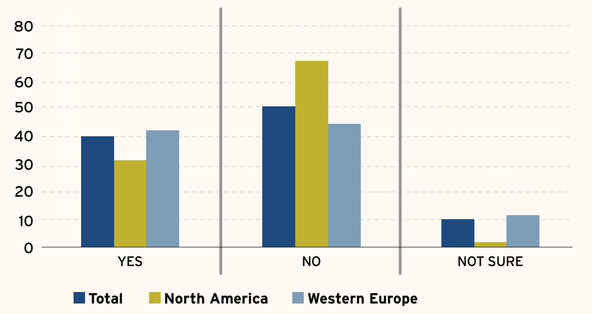
Specifically, 55 percent of North American respondents cite the United States as the most attractive nearshoring destination, up from 42 percent in 2014. Mexico is favored by 31 percent of executives, up from 2014 (28 percent), but still down compared to three years ago when one in two companies identified it as the top target. Safety and security issues remain underlying concerns.

Despite positive trending, there is less urgency to nearshore in today's environment. Only 21 percent of North American and European executives say these decisions are more important now than one year ago—however, 82 percent of North American decision makers indicate such decisions are "about the same" in importance as last year.

The availability of skilled labor further complicates nearshoring decisions, says the survey. Accordingly, that was the top challenge cited by both North American and European respondents.

WESTERN EUROPE MOVES MANUFACTURING CLOSER TO DOMESTIC MARKETS

Is nearshoring a possible opportunity for your company to serve domestic demand requirements?



Source: *Strategic Manufacturing Sourcing Outlook*, Alix Partners

Asset-based carriers such as Ryder operate their own equipment and work directly with shippers to move freight. Freight brokers and 3PLs are non-asset-based, and act as an intermediary between asset-based carriers and shippers to arrange freight movements.

to own assets," says Jeff Tucker, CEO of Haddonfield, N.J.-based Tucker Company Worldwide. The fact that his firm doesn't own assets, he notes, is not an issue with customers. Their carrier selection process hinges on other factors.

Capacity is the main issue today, notes Tucker, adding that his company looks for the best carrier for each shipment. "Our staff has the tools, techniques, and technology to find the best carrier for a particular shipment," says Tucker.

Most non-asset-based firms have hundreds, if not thousands, of carriers under contract, and providing capacity is the broker's job, he adds.

Capacity is also key for asset-based providers. "We're investing and expanding because we all need capacity in the end," says Chip Smith, COO of Rosemount, Minn.-based Bay & Bay Transportation. "There are advantages in owning assets because some shippers will not deal with non-asset-based providers."

Some carriers leverage both the asset- and non-asset-based parts of the business. "While we are part of the England family, we are completely standalone, working jointly with both asset- and non-asset-based providers," says England. While having C.R. England's assets is helpful, he notes, its portfolio of non-asset-based transportation solutions allows it to provide the optimal answer for shippers.

Firms on both sides of the equation are adding services and offerings, as 3PLs in general increasingly provide seamless transportation services.

"I see brokers as a bridge between the carrier and the shipper, providing solutions that may not be available without their assistance," says England.

Indeed, "asset-based transportation firms continue to aggressively diversify their businesses," says Monica Truelsch, director of marketing for TMW Systems. Many traditional asset-based companies are already operating in multiple business lines, and "one-third plan to expand into at least one additional category in the next three years," according to the 2014 TMW Transportation and Logistics study.

Even while operating their businesses in this manner, legal separation of the entities is a necessity between the broker or 3PL operation and motor carrier.

"It makes sense for companies that are both asset- and non-asset-based to operate each as a separate business," says Voltmann. This allows each entity to seek its own best

From the Project Logistics Case Files...

From more than one million newly spawned fish weighing around one gram each to racecars traveling with more than 30 tons of loose spares and support equipment, these recent project logistics moves underscore the meticulous planning that goes into meeting each unique demand.

FLYING FISH TAKE FLIGHT IN RUSSIA

CARGO 1.2 MILLION MUKSUN FISH

ROUTE From a fish hatchery near St. Petersburg to the freshwater Ob River basin in northern Russia

LOGISTICS TEAM Airline company Volga-Dnepr and AirBridgeCargo's transport professionals organized the delivery on behalf of aircraft charter broker Air Charter Service.

ACCOMMODATIONS The whitefish, mostly found in the Siberian Arctic waters, "flew" in four 2.5-ton water containers with oxygen tanks from St. Petersburg to Salekhard onboard a Boeing 737 freighter operated by AirBridgeCargo.

To ensure the well-being of the fish during the flight, fish breeding experts were on hand, and the aircraft's cargo hold was maintained within a 12-14°C temperature range. The fish weigh around one gram each but will eventually grow to up to 60 centimeters. The engineers in charge developed a special loading plan for the flight and used bespoke equipment to unload the fish in their water containers in Salekhard. The fish have since been released into the Ob River.

SOLAR CAR HEADS DOWN UNDER

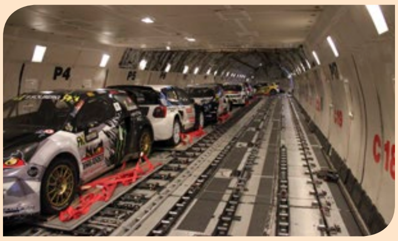
CARGO NUNA SOLAR CAR

ROUTE From Amsterdam to Hong Kong to Australia, to defend its world title in the World Solar Challenge 2015 in October

LOGISTICS TEAM Forwarding company CargoMasters BV arranged the delivery on behalf of the Nuon Solar Team.

ACCOMMODATIONS The Nuna Solar car started its journey to the race onboard one of AirBridgeCargo Airlines' scheduled Boeing 747 freighter flights from Amsterdam to Hong Kong. The car was transported in a crate specially designed by the Nuon Solar Team, which contained the vehicle, equipment, and spare parts.

RALLYCROSS SUPERCARS HELL-BOUND



CARGO 19 RALLYCROSS SUPERCARS

ROUTE From Montréal-Mirabel Airport in Canada to Trondheim Airport, Norway. Final destination: Hell, Norway.

LOGISTICS TEAM Chapman Freeborn Airchartering, along with logistics partner GAC

ACCOMMODATIONS Marking the first time supercars competing in the FIA World Rallycross Championship have been transported by air, the supercars started their journey onboard a chartered Kalitta Air B747-200F, departing from Montréal-Mirabel Airport in Canada.

The supercars, each capable of 0-60 mph in 1.9 seconds, traveled with more than 30 tons of loose spares and support equipment.

business mix, and does not force one upon the other, he notes.

In the end, the shipper chooses whether to deal with either type of service provider, or to utilize both in a blended solution, depending on specific needs.

"We use both asset- and non-asset-based service providers," says Gary Bleazard, vice president, procurement-logistics, fleet, and co-manufacturing for Coca-Cola Company. Non-asset-based providers supply nearly 20 percent of the company's requirements, he notes, and he doesn't expect any major shifts in the near future.

–Walter Weart

Cashing In

Money may be the root of all evil, but the route of all money is ever so 20th century.

Moving coins and currency through the supply chain uses manual processing, says Bernie Hogan, senior vice president of emerging capabilities and industries at supply chain standards organization GS1 US. "The players are the people who handle cash behind the scenes, such as merchants, banks, armored cars, and the Federal Reserve," he adds.

Armed with the mission to create cash logistics standards, the new 28-member GS1 US Cash Visibility Discussion Group convened for the first time in St. Louis on May 20, 2015. Members included JPMorgan Chase, Dunbar Armored, Walmart, the Fed, and GS1 US.

"How you track pallets of cash or pallets of laundry detergent is similar," says Hogan, "except for the products and their value."

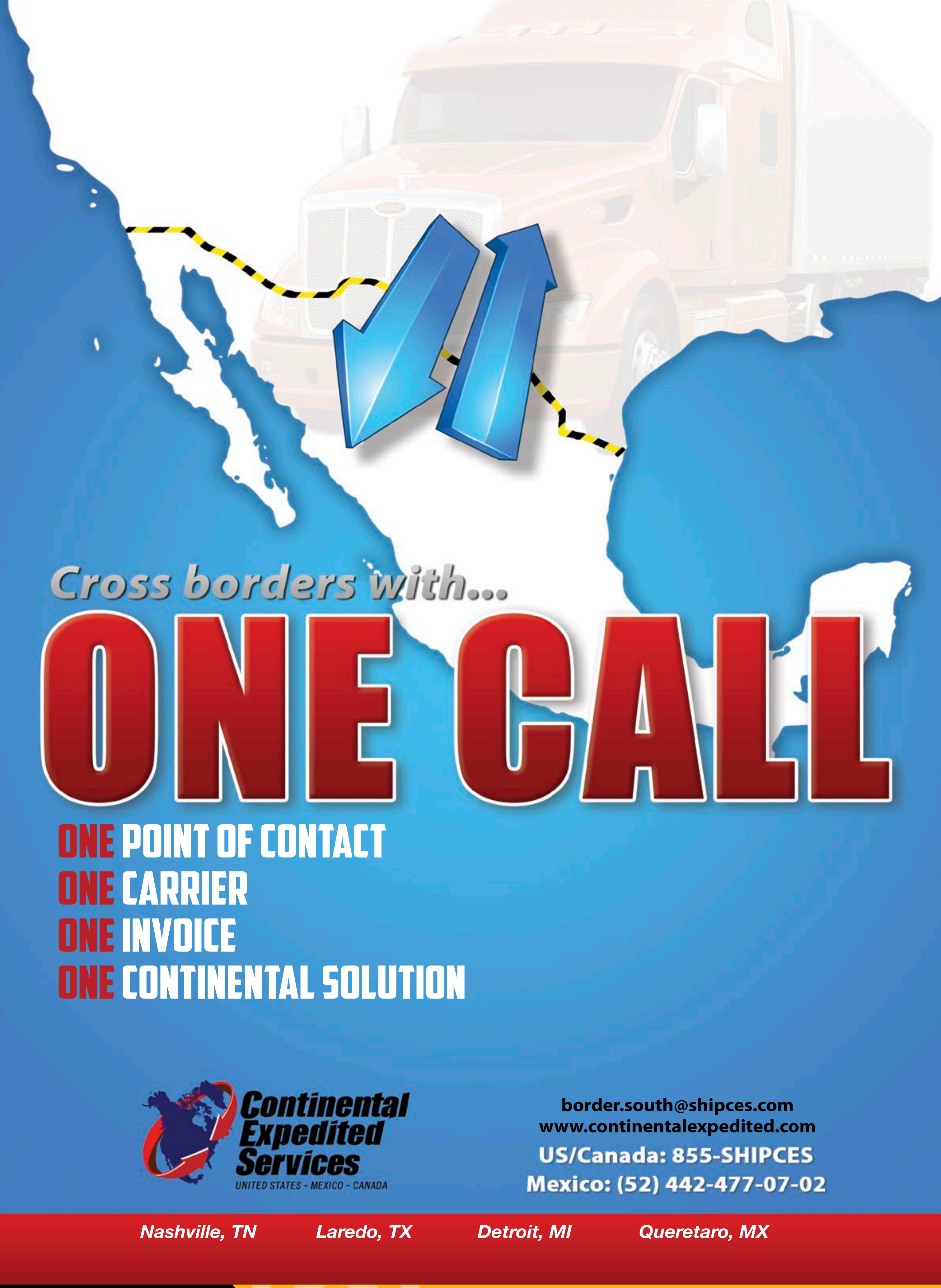
Using the new standards, banks can expect better data accuracy and better support of regulatory compliance requirements, faster discrepancy resolution, potential real-time access to a parcel's whereabouts, and the efficiencies of automation. "Margins are getting thinner," explains Hogan, "and the turnaround on cash is critical."

Armored cars will find reduced dock time, which slashes fuel and labor expenses and can boost productivity.

A GS1 US proof-of-concept test—using just one Dunbar office and one Bank of America office—yielded a projected annual $1.1 million savings. A model already exists—Germany's CashEID—which launched in 2006, and was joined by other European states.

Look for the 2015 web publication of recommendations for review and comment in October, and finalized standards in March. Then expect a fun two to three year prospect of techno-switching and learning curve migraines.

–Norman Schreiber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GLOBAL

THE WORLD AT A GLANCE

by Joseph O'Reilly

MOL posts high on-time performance numbers on Drewry's latest report.

Ocean Carrier Dependability Ebbs

Over the past few years, steamship lines have been juggling assets and throttling back transit times to better balance supply and demand. A slowdown in global trade—especially between Asia and Europe—and the industry's well-publicized struggles with overcapacity have forced the issue for many carriers. While shippers and supply chains have adjusted to new alliances and slow steaming, reliability is non-negotiable. But a new report from Drewry Supply Chain Advisors suggests service is beginning to slide.

Container service reliability across the three main East-West trades declined in July 2015, falling by four percentage points, according to Drewry's *Carrier Performance Insight* online schedule reliability tool. This was the first dip after six consecutive months of improvement. The latest overall monthly performance is a result of lower reliability scores in the Asia-Europe and Transpacific trades, although service punctuality for the lesser Transatlantic route reached a new high-water mark. Despite the July dip, reliability remains well above the level it was at the same point in 2014, when the East-West trades' on-time average ratio was only 59 percent.

In terms of carrier reliability, MOL leads with 80.1 percent on-time performance, pushing Maersk Line (79.8 percent) to second. At the other end of the spectrum, Wan Hai Lines (57 percent) and Pacific International Lines (56.6 percent) are the least dependable carriers, according to July 2015 data.

Moving forward, Drewry expects reliability in the Asia-Europe trade to improve as a consequence of the expanded Suez Canal, which will reduce transit time from 18 to 11 hours, and waiting times to no more than three hours.

"The Suez turning into a two-lane maritime highway, from what could have been described as a congested, single country lane, will not only improve capacity, but will also speed transit times and reduce delays," explains Simon Heaney, senior manager of supply chain research at Drewry. "This can only be good for operational efficiency."

Trade from China, Southeast Asia to North America and Europe Will Soar

Trade from China and Southeast Asia to North America and Europe is expected to boom during the next five years, according to a new study released by business analyst company IHS Inc.

China's trade will continue to increase by more than five percent annually between 2015 and 2020, according to the World Trade Service of IHS Maritime & Trade forecasts. This positive medium-term trade growth comes despite recent setbacks caused by China's marked economic slowdown and weaker growth among other emerging markets in the current and near-term.

"These increases will not be the double-digit rises seen before the 2008 global economic crisis," says Krispen Atkinson, principal analyst at IHS Maritime & Trade. "However, an increase of more than 30 percent in the next five years underscores China's intent to remain a new trade hub-and-spoke linchpin for the rest of the economic world, cementing the Maritime Silk Road Initiative via China and Asia within the emerging market universe."

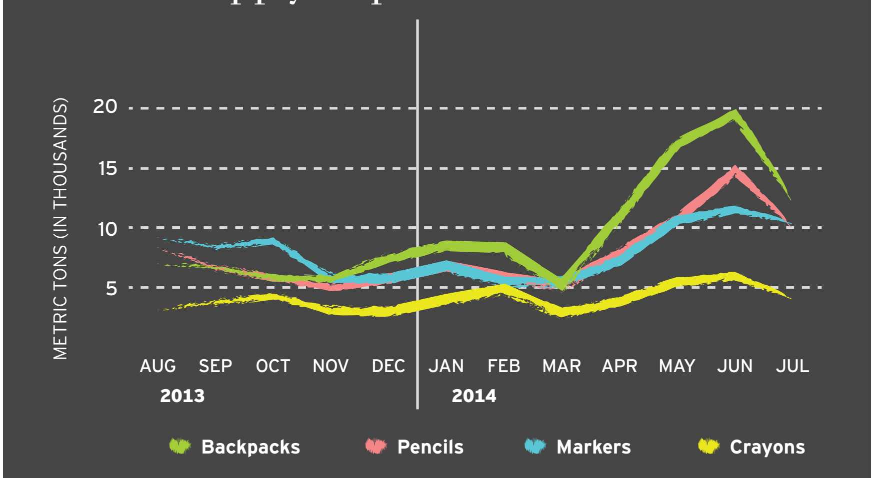
One new trend is the move toward larger containerships to streamline the supply chain. The four alliances that dominate east-west trade are pushing the trend toward containerships capable of carrying 20,000 boxes (20 foot equivalent units) in their quest to reduce unit costs with ever more efficient vessels. Current containerships hold around 13,000 boxes, so the new super-containers are capable of transporting about 50 percent more cargo. Their push has made further capacity available in the trade.

Southeast Asia-North America Trade Boom

"China may be the major powerhouse in the region, but Southeast Asia is making significant headway," Atkinson says.

Vietnam's exports are estimated to increase by 44 percent by 2020. IHS

School Supply Imports Make the Grade



September means back to school for kids and parents, but U.S. retailers were prepping months ago. Most school supplies were imported in May, June, and July to get ready for the high August demand. Imports of backpacks, pencils, markers, and crayons skyrocket during the summer.

Source: Zepol Corporation | www.zepol.com

IKEA Sees the Forest for the Trees

IKEA Group is taking a page out of Henry Ford's book with the decision to acquire 83,000 acres of forests in central and northeastern Romania. While the industrialist's ill-fated plans to establish a rubber plantation—Fordlandia—in the Amazonian rainforests of Brazil ultimately failed, the Swedish furniture producer and retailer's vertical expansion has deeper roots.

The acquisition provides a local, renewable wood source for furniture production. Romania now becomes the first country where IKEA owns the complete product lifecycle—from timber harvesting to manufacturing via its direct cooperation with Romanian suppliers to the retail business.

Shortening and controlling the supply chain from source to shelf provides countless advantages, especially as timber prices rise. Europe's environmental mandates place a premium on renewable sources. Investing in sustainably managed forests close to major markets is part of IKEA's growth strategy in Europe.

forecasts a 44-percent increase in trade between Vietnam and North America, and a 43-percent increase in trade between Vietnam and Europe in the next five years. "In terms of actual cargo, the figures are low when compared with China, but are still huge jumps for these economies," Atkinson says.

Trade between these two regions is made up of manufactured goods, such as home appliances and mechanical hardware. "Vietnam, India, and many South Asian economies stand to benefit from recent energy and commodity price falls as net importers of these goods," notes Jan Randolph, director of sovereign risk analysis at IHS. "They have significant industries and service sectors of their own that benefit from cheaper inputs. They also have currencies that are not coupled to a strengthening U.S. dollar."

IHS expects trade routes from China to Africa will see a marked increase over the next five years, with the highest growth expected from the East Africa-to-China route, incorporating Malawi, Mozambique, Zambia, and Zimbabwe.

"Trade between East Africa and China is expected to increase by 91 percent by 2020, centered around manufactured goods," Atkinson says. "East Africa is becoming a new hub for the Chinese."

Chinese leadership has publicly announced its commitment to develop infrastructure, and to promote regional integration in East Africa. "In the coming years, China's relationship with East Africa will change," notes Natznet Tesfay, head of Sub-Saharan Africa analysis at IHS Country Risk. "Right now, the focus is on importing raw materials and exporting manufactured goods. But, Chinese investments in enhancing regional interconnectivity will enable it to take advantage of comparatively lower operational costs, and to onshore manufacturing activity in East Africa."

Panama Canal Plays the Draught Card

Few topics have elicited as much debate in the world of trade over the past few years than the Panama Canal. As the century-old construction completes its third-lock expansion late in 2015, there is plenty of conjecture about how it will impact global shipping patterns. It's a loaded question with multiple digressions. Recurring labor strife on the U.S. West Coast, the migration of Asian manufacturing westward, West Africa's looming potential, and a booming Southeast U.S. population invariably factor into the conversation.

So does El Niño. Recently the Panama Canal Authority issued an advisory that ships would have to limit draughts—possibly to 38.5 feet—because of low water conditions in Gatun and Alajuela lakes. While the canal has been a beacon of modern engineering marvel for more than 100 years, it's still beholden by Mother Nature's whim. This is the first such restriction in almost 20 years.

Rainfall over the watershed feeding the lakes, which lies east of the canal, has dropped sharply as a result of the El Niño weather phenomenon. Similar problems occurred in 1997 and 1998.

The Panama Canal Authority has since rescinded the caution due to increased rain and water conservation measures. Vessels will continue to transit through the canal at a maximum 39.5 feet. However, the threat of further disruptions is real. Ships that are loaded and in transit prior to restrictions will have to figure out how to offload freight in order to pass through the canal.

Preventing Fraud in the Seafood Supply Chain

As Europe and the United States crack down on supply chain labor abuse, demand is increasing for visibility solutions that hold businesses accountable for where they source product.

To help address these concerns, London-based Marine Stewardship Council (MSC), a sustainable seafood certification organization, is piloting a traceability tool that will enable shippers to prevent fraud within the supply chain. To date, there is no online system available that can securely handle and verify information on seafood transactions on a global scale. The MSC Online Transaction Solution verifies seafood sales and purchases made by processing, distribution, and retail companies as they move through a complex global supply chain. It gathers information such as volume, species, invoice number, and transaction date to mitigate the risk of non-sustainable products being labeled and sold as certified.

If the pilot proves successful, MSC aims to implement the traceability tool across its full program by 2018.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Chris Timmer, CCO, LeanLogistics
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Intelligent Technology Provides Visibility into Supply Chain

As more and more companies scale and expand, managing transportation is quickly becoming a challenging factor of growth. More so, companies need to have complete visibility into their entire transportation process in order to operate as efficiently and effectively as possible. While many TMS providers can promise transportation management, intelligent transportation technology also provides organizations with the means to gain new sources of competitive advantage through complete supply chain visibility.

Increased Visiblity

Traditional installed software is built with single user architecture in mind. Installed TMS solutions don't provide the visibility, centralized control or offer the collaborative benefits of an intelligent platform, which is why single-instance, multi-tenant models like LeanTMS are becoming the growing preference among industry experts and transportation professionals. This type of innovative transportation technology allows multiple users—vendors, carriers, shippers, basically, all facets of a supply chain—to work collaboratively in a single instance of the technology. Furthermore, the connectivity provided across multiple partners makes visibility a natural outcome.

So what does visibility from a TMS mean? With visibility of better data, companies can determine best transportation options, therefore enabling smarter decisions. With real-time transportation information, companies in the LeanLogistics Transportation Network are able to monitor planned flows of goods as well as data of executed shipments. This also establishes primary benchmarks for the transportation industry and, by measuring company performance against the performance of a larger network, companies can begin to leverage this information in the interest of building a better supply chain.

Rich Products Corporation, a leading supplier and solutions provider to food service, in-store bakery, and retail marketplaces selling more than 2,000 products in over 100 countries, partnered with LeanLogistics in order to better manage and measure transportation execution. With the visibility provided through innovative transportation technology, the company is able to proactively meet capacity needs, identify and track key customers to provide 'white-glove service', as well as outperform the market enabling the company to become a 'shipper-of-choice'. Furthermore, business intelligence and smarter data address performance metrics, customer service and carrier compliance.

"We are able to complete rate bids and then take that data to make smarter network decisions, drive utilization of trucks and optimize multi-stop loads. It's more than just rates, it's the ability to drive savings over several different areas of transportation," says the director of transportation for Rich Products.

Benefits

Gaining visibility to global and domestic data is the primary benefit of intelligent transportation technology that also provides access to a network. Members of the LeanLogistics Transportation Network have un-biased access to transportation data, such as rates, carrier performance, and transit times, to strategically improve performance by providing an industry frame of reference, beyond historical company-only data. By accessing network data, companies benchmark with better business intelligence, allowing smarter decisions for continuous improvements enabling them to use this information to plan for tomorrow.

LeanLogistics is a global solutions provider of SaaS transportation management system applications and supply chain services enabled by the industry's largest transportation network.


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BY ED RUSCH
Executive Vice President of Global Marketing, Elemica
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Using Analytics to Differentiate Your Customer Service

Differentiated service is about making your company easier to do business with, anticipating the needs of your customers, and having products available when needed.

For example, when I travel last minute, I expect my preferred rental car provider to have a vehicle available for me when I arrive. I don't think about their current demand, nor do I think about the individual profiles of other renters. As a good customer, I simply desire that they have a car available. Not having a car available because they lacked the proper insight into my demand means they lost an opportunity.

Anticipate Demand

The same holds true for the customer service operations of process industry manufacturers. Their customers all expect the material they need to be where it's needed, when it's needed, and that the transportation assets are lined up accordingly. During instances when normal demand signals are absent, companies that can anticipate, plan, and meet customer expectations, despite less-than-ideal circumstances, become the winners through differentiation. Companies that lack the ability to effectively see and efficiently fulfill expectations when usual demand signs are missing risk watching their business go to a competitor.

Leverage Analytics

Descriptive, predictive, and prescriptive analytics are necessary to contribute to an organization's goal of improved and more informed decision-making, and should co-exist. One is not better than the others; they are just different.

Descriptive analytics paint a picture of what is currently happening, while predictive and prescriptive analytics unlock differentiated capabilities. This enables companies to shift perspective beyond the horizon and look into the future to notice demand signals, market volatility, or transportation issues before they happen.

Predictive analytics give supply chains the ability to respond to actual market conditions, predict consumer behavior, and identify possible delivery constraints. In business, predictive models exploit patterns found in historical and transactional data to identify risks and opportunities. Models capture relationships among many factors so companies can assess risk or opportunity associated with a particular set of conditions to guide decision-making.

For example, companies can use weather data to predict buying behavior or potential supply disruptions, forecast future demand, predict the price of fuel, and sense transportation hub congestion to dynamically re-route to less congested ports.

Prescriptive analytics envision many different scenarios using intelligence gathered in real time, and present an optimal solution. Prescriptive analytics help companies decide the best course of action to take given certain business objectives, requirements, and constraints. It seeks to find the optimal solution given a variety of choices, alternatives, and influences that might affect the outcome.

With descriptive and predictive analytics helping to understand the drivers behind customer buying patterns, combined with prescriptive analytics that can determine the optimal schedule, production, inventory, and supply chain network design, businesses can cost-effectively anticipate customer needs and thus provide high levels of service. ■

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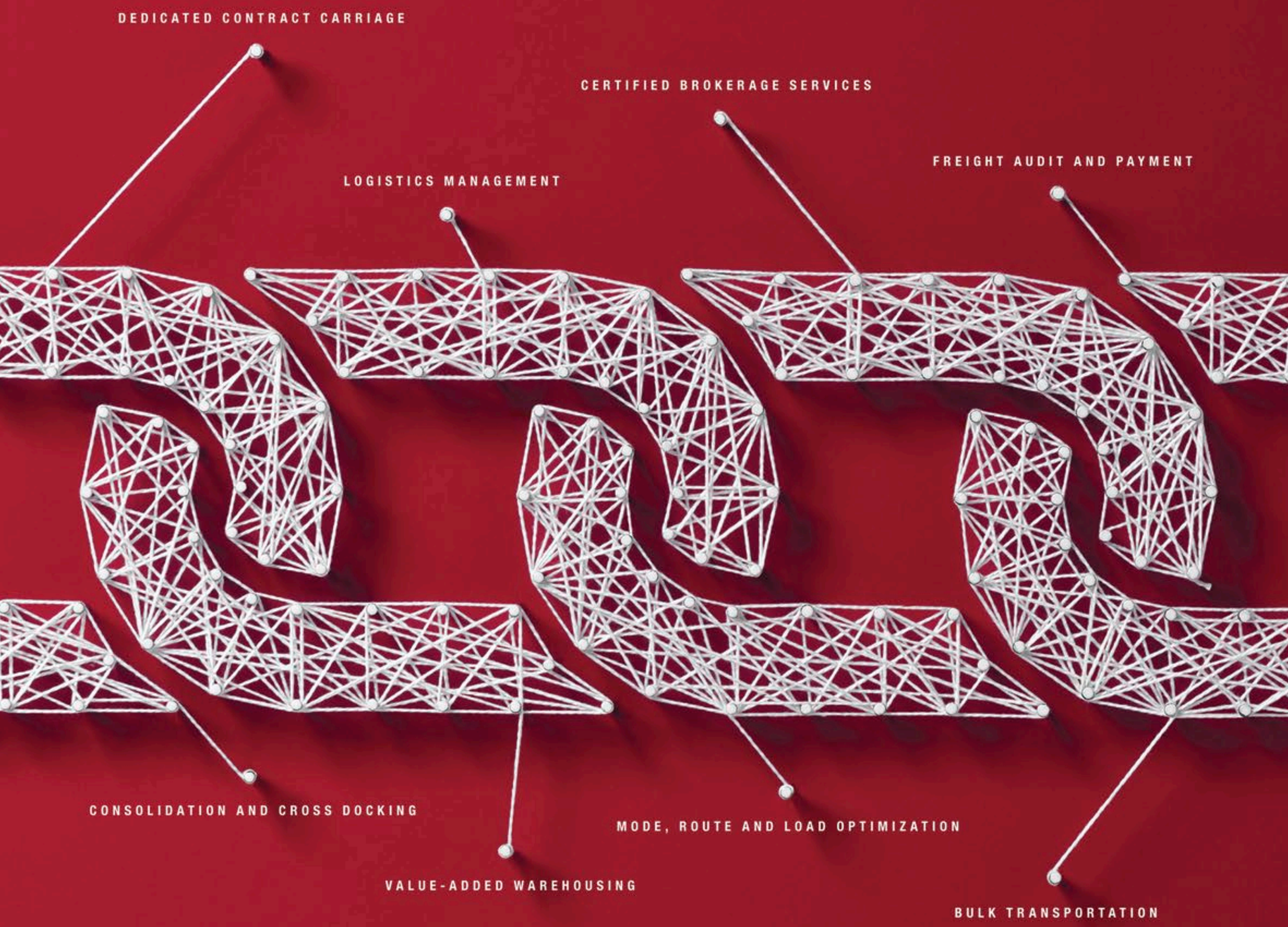

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SMART MOVES

BY THOMAS W. DERRY
Chief Executive Officer, Institute for Supply Management
tom.derry@instituteforsupplymanagement.org | 480-752-6276

Why Excellence in Supply Management Matters More Than Ever

In today's competitive business environment, having visionary leaders and great products is not enough. In the past 20 years, companies have experienced a profound shift, and have dramatically increased their spending on external suppliers.

This places the supply management function in the spotlight as a key driver of profitability. The better supply management teams are at selecting, overseeing, and collaborating with these partners, the stronger their organizations will be. Indeed, the performance of the global economy depends on having outstanding people in supply management positions across the world.

Attracting and retaining top supply management talent—both experienced and emerging practitioners—is critical. Even more crucial than the recruiting process is ensuring practitioners have access to real-world training.

This approach often requires companies to participate in what can feel like a balancing act. Recruiting and retaining quality professionals of all levels can put a strain on resources, such as time and money. This frequently results in filling vacant positions with under-qualified or poorly trained employees, leading to major liability concerns, such as:

- Being sued for a large contract with a poor or missing indemnification clause.
- Discovering a key supplier overseas is using child labor.
- Forgetting to factor in the cost of global export/import taxes.
- Setting quality control limits too wide, and accepting substandard materials.
- Having insufficient inventory levels that shut down production during a peak sales period.

These scenarios underline the importance of proper training and development. Growing the expertise of current teams, and investing in the next generation of supply management professionals, represent strategic investments.

For logistics professionals balancing the supply and demand curve of the global economy, professional excellence is essential in many areas, including:

- **Reverse logistics.** Consumers and corporations increasingly expect products to be disposed of properly at the end of their useful lives. In the next decade or so, we will see increased demand for expertise in this area.
- **Agility and analysis.** The West Coast port strike stressed the need for agility. Logistics professionals must quickly review, analyze, and synthesize data to promptly reroute shipments as necessary. A company's service, reliability, and profits depend on it.
- **Transportation costs.** Many companies expected transportation charges would decrease with the 50-percent drop in crude oil prices, but that has not been the case. People who are able to understand the cost drivers, and know what is negotiable, will be highly valued.
- **Food logistics.** Consumers show increased expectations for both food quality and a natural origin. Walmart illustrated this need in 2010 by committing $1 billion to source from local farmers. Such initiatives call for competency across the supply chain.

These examples, and many others, illustrate how the need for professional excellence has never been more paramount. Supply managers' capabilities and responsibilities have seen unprecedented growth in recent years. Never before have they been asked to take on as much responsibility as they do now.

The more today's professionals become masters of their craft, the larger the contribution they can make to their organizations, and, in turn, the greater the impact they can have on the supply management profession. ■

THE **FINE PRINT**

BY KATHRYN C. THOMAS
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Positive Train Control: Negative Impact on Railroads?

The Rail Safety Improvement Act of 2008 (RSIA) mandates that Positive Train Control (PTC), a set of advanced technologies designed to stop or slow a train before accidents occur, be implemented across approximately 60,000 miles of the nation's rail lines by Dec. 31, 2015.

Class I railroad main lines that handle any poisonous, inhalation, or hazardous materials, and any railroad main lines over which regularly scheduled intercity passenger or commuter rail services are provided, require PTC.

The PTC mandate does not directly affect the majority of the Class II and III railroads. During the Federal Railroad Administration (FRA) rulemaking process, the American Short Line and Regional Railroad Association (ASLRRA) proposed several changes to the FRA final rule designed to limit the impact on Class II and Class III railroads.

Extended Deadline for Class II and Class III Railroads

In an amended final rule, the FRA eliminated the PTC requirement for trains traveling fewer than 20 miles on PTC-required track, and extended the deadline to Dec. 31, 2020, for Class II and Class III railroads to employ PTC-equipped locomotives.

Despite these caveats for Class II and Class III railroads, the ASLRRA reports approximately 100 of the Class II and Class III carriers, roughly one-fifth, will have to make substantial investments to upgrade their locomotives to be PTC compliant as they have trackage rights over Class I lines that are required to have PTC installed. These Class II and Class III railroads report that nearly 80 percent of their upfront PTC costs will be related to purchasing and installing onboard PTC equipment. While locomotives built in the past 25 years have been equipped with microprocessor-based control systems, older locomotives lack the necessary modern electronics for PTC.

Current average costs for PTC installation on a modern locomotive are \$50,000 to \$75,000, while installation of PTC equipment on older locomotives averages at least twice that investment, at approximately \$150,000. In light of this price tag, the railroads have to decide if PTC installation on older locomotives is cost-effective for them. Finally, estimated PTC maintenance costs for these 100 Class II and Class III railroads collectively average \$3 million to \$5 million per year.

Demanding Participation

As the deadline for PTC implementation looms, Class II and Class III railroads will likely find that the Class Is demand their participation in both PTC capital implementation costs and ongoing maintenance costs. Depending on the provisions of the applicable trackage rights agreement, these smaller railroads may have to contribute, at the very least, to long-term maintenance costs.

The railroad industry estimates that PTC will cost between \$14.5 billion and \$22.3 billion over the next 20 years. Estimates of the initial deployment costs range between \$6 billion and \$10.7 billion. Given the gravity of these numbers, Class II and Class III railroads must carefully review and negotiate their rights and obligations relating to PTC under any trackage rights contracts. ■

TRANSPORTATION METRICS:

Keeping Score

BY MERRILL DOUGLAS

TRACK KEY PERFORMANCE INDICATORS TO MAKE SURE YOUR CARRIERS ARE UP TO PAR.

When every mile—and every dollar—counts, shippers need to know which carriers are keeping them on a course to profitability. That's why carrier metrics are so important.

A scorecard that measures carrier performance promotes better dialog. "Scorecards provide a quantifiable way to measure the success of the relationship between the parties," says Ken Sherman, vice president and general manager of IntelliTrans, a logistics technology vendor and a business unit of Nashville-based TransCore.

Sometimes shippers—or their service providers, such as third-party logistics (3PL) companies and bill payment and auditing firms—collect and analyze data on carrier activity to generate key performance indicators (KPIs). Other times carriers do that work themselves. In either case, the metrics often spark important conversations, aimed at improving the flow of freight and information and controlling costs.

"Data helps shippers quickly identify opportunities, and allows them to react to them faster than ever before," says Todd Holt, president of transportation at supply chain company NFI in Cherry Hill, N.J.

Which carrier metrics should a shipper track? That depends on the company's goals. But it's no surprise that two of the most popular KPIs are on-time pickup and on-time delivery.

Shippers scoring carriers on timeliness gain an objective way to evaluate service. "In an environment without a scorecard, customers can claim carriers aren't on time, while the shipper has no visibility into why customers are complaining," says Sherman.

What Do You Mean by 'On Time'?

Before you can implement an on-time metric, you must define what "on time" means to you. "The requirements are different, based upon your industry, your own distribution center (DC) setup, and that of the consignees," notes Katy Keane, president of supply chain consulting firm Koncatenate, in Columbus, Ohio.

Keane's experience with on-time delivery metrics includes seven years as vice president of transportation services at closeout retailer Big Lots. In her estimation, a carrier is on time when the truck arrives within one hour before or after an appointment.

For 3PLs, which often use the same carrier to serve multiple shippers, the definition of on time becomes extremely complex.

"Customer A might define on time as pickup within three hours, delivery within one hour," says Tom Nightingale, vice president, transportation logistics at Pittsburgh-based 3PL GENCO, which became part of FedEx in 2015. "But Customer B might define on-time pickup or delivery as within 24 hours." The same carrier might earn a mediocre score for its work with Customer A but an excellent score for Customer B.

A related metric applies to shippers that pay for their inbound transportation. Once a carrier accepts a load, how promptly does it make a pickup appointment with the vendor so the shipment will be ready? "Vendors often complain that carriers do not call, they just show up," Keane says. "Or they call three hours before a pickup."

Third-party logistics providers such as NFI work with each shipper to draw up a custom list of required performance metrics, such as on-time pickup and delivery.

Carriers who persist in those habits don't fare well on scorecards.

Several important carrier metrics focus on communication. For example, how long does it take the carrier to send a status update through an electronic data interchange (EDI) message or some other means?

"Most carriers are very good at providing EDI messages, but not all are good at timeliness," says Nightingale. A status message that arrives one day late isn't useful.

Quick notification is also essential when an exception is about to occur. "It's critical that shippers know as early as possible that the carrier will be late," says Keane. That's why she scores carriers on whether they provide timely communications.

Keane also scores carriers on whether they use EDI at all. "I wouldn't even consider using a motor carrier that was not EDI compliant and able to send shipment status messages (214s), and to accept or reject my tenders," she says. Not only must those EDI messages arrive on time, but they must also be accurate, she notes.

Shippers that use *CarrierPoint*, IntelliTrans' transportation management system (TMS), rely on its status updates from carriers. So rather than focus on EDI compliance, IntelliTrans advises shippers to score their carriers on how consistently they use the TMS.

Like Keane, Sherman suggests shippers monitor those communications for accuracy and promptness. "For example, if our customer wants to collect proofs of delivery, does the carrier provide them accurately and on time?" he says.

To help shippers with data quality, IntelliTrans operates a service bureau that audits carrier data in the TMS, making sure it's complete, timely, and correct. "If it's not, then scorecards, reporting, or analytics might be inaccurate," Sherman says.

Capacity, Safety, Accuracy

For GENCO, another important metric involves capacity: How consistently does the carrier accept committed freight?

"Committed" is an important distinction. Some shippers and 3PLs measure the number of tendered loads their carriers accept. But if a contract says the carrier will accept 10 loads a week, and the shipper then tenders 30, it's unfair to downgrade that carrier's score because of the 20 loads it declined. "If a carrier gives us a commitment to pick up 10 loads per week—two loads every day on five business days—that's what we will hold it accountable for," says Nightingale.

GENCO also rates carriers on safety, using scores from the Compliance, Safety, Accountability (CSA) system operated by the Federal Motor Carrier Safety Administration (FMCSA). "And we look at claims—not their quantity, but the time

it takes to resolve them," says Nightingale.

Because it hauls a high volume of perishable freight, NFI often tracks adherence to temperature standards for its customers. "Some shippers are concerned about the temperature of their products when loaded, en route, and in the warehouse," says Holt.

Some shippers also want NFI to measure loading efficiency. "They want to know how much weight and volume they can fit on our equipment, to make sure they ship as few loads as they can," Holt adds.

Another metric Keane tracks is how effectively carriers participate in official freight bids. "Do they submit accurate information—ZIP to ZIP, state to state, or whatever level is required, and do they follow the correct format?" she asks.

Accuracy in billing is also an important metric. "Did the bill match what the shipper sent in the tender? Did it match what the carrier moved in terms of miles and costs?" Keane notes. The shipper—or a third party—should also track whether the carrier applies accessorial charges accurately, she adds.

One company performing freight audits for shippers is Cass Information Systems, based in St. Louis. Cass creates scorecards for customers to evaluate carriers, using billing data that passes through Cass's information systems.

Billing accuracy is an important metric. "Shippers should try to eliminate as many exception invoices as possible," says Tom Zygmunt, Cass's manager of marketing

Warehouse Metrics Keep Workers at Top of Their Game

Transportation isn't the only area where companies improve logistics efficiencies by collecting and analyzing performance data. Metrics can work wonders in the warehouse as well.

The Visual Supply Chain, a set of technology solutions from Dallas-based RMG Networks, uses data pulled from warehouse management systems to measure employee performance and overall operational efficiency, in real time. RMG displays the metrics on large LCD screens in work areas, to update staff and managers on how work is progressing.

Most distribution or fulfillment centers use static scoreboards to highlight employee performance. "We're going to find out how those employees did yesterday in most cases, or how they're doing month-to-date," says Kerwin Everson, vice president, supply chain solutions at RMG. "They have nowhere to look to find out how they're doing currently, and what they need to do for the rest of the day."

To fill the need for current performance metrics, RMG's application sends a periodic query—every 30 minutes, every five minutes, or whatever interval the customer specifies—to one or more management systems—from enterprise resource planning to warehouse, transportation, and labor management. It can even integrate with systems that control automated equipment.

"We've worked with customers' Intelligrated, Dematic, or Pyramid systems to capture data about the location of certain boxes, or which chutes might be blocked," Everson says.

RMG analyzes the data to calculate, for example, how many units employees are picking, packing, or putting away per hour, often using that information to draw comparisons. "Not only can we rank pick zones against one another, but we can rank individual pickers," Everson says.

Those rankings foster a sense of competition. "Just putting up the information, sometimes in a stacked ranking, can automatically create productivity improvements," he says.

Displays can also indicate what portion of a job a team has completed—for example, on a loading dock. "We have a bar chart that shows a truck being filled up, indicating whether it's 50 percent or 70 percent full," Everson says. The chart can indicate progress by both volume and weight.

In tracking how much of their work individual teams have accomplished for the day, the Visual Supply Chain plays the role of a labor management system. For example, the system might estimate that workers in Zones A and B will finish their work for the day by 2 p.m., making it obvious that those employees have to move to Zones C and D next.

In warehouses that give bonuses to workers who exceed performance targets for speed, quality, and other factors, the real-time displays provide extra encouragement. "We can put up incentive information, and sometimes the stacked ranking is enough to help them do a little better," Everson says.


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and business development. "If a carrier keeps misbilling, the shipper gets charged for every time a bill comes through. It takes more time and more effort to resolve exception invoices."

It might also be important to track the accessorial charges that come attached to bills. Say, for example, a carrier frequently adds retention or demurrage charges — fees for time beyond an initial free period when freight sits on a truck but isn't en route. "Shippers have to ask why this is happening," Zygmunt says. Did the retention or demurrage occur, or does the carrier habitually tack on the charge without justification?

Benchmarking Rates

Along with KPIs focused on accessorials, shippers might track other metrics related to rates. The important data points in that category are spend per carrier and spend per lane. When shippers capture that data, they can compare what it costs to move similar loads in similar lanes.

That exercise might show, for example, that Carrier A charges a higher base rate, but then offers a significant discount during negotiations, while Carrier B charges a lower base rate but offers a smaller discount. "The higher rate can turn out to be less than the lower rate, depending on the discount," Zygmunt explains.

Cass offers a benchmarking tool that includes aggregate rates for certain kinds of lanes, transportation modes, and weight categories. A shipper can use the tool to see how its carriers' rates stack up against typical market rates.

DAT Solutions in Beaverton, Ore., offers a product called *RateView* that gives subscribers access to real-time spot market freight rates and current contract rates. Shippers can use the system to benchmark the rates they pay against market rates for the same lane.

Say, for example, a shipper looks up rates for a trip from Chicago to Minneapolis. "The shipper looks at a 13-month history of market rates, and sees a scatter chart of their loads and the line-haul rates they paid for those loads," explains Ralph Galantine, *RateView*'s product manager. The system shows at a glance how the shipper's actual rates line up against the average.

RateView can also list every load a shipper sent on a particular lane during a 90-day period, with the name of the carrier attached to each. "By sorting that information, shippers can look at how each carrier is performing in terms of rates, and their overall rate on the lane," Galantine says.

> A carrier scorecard "tends to open a healthy dialog about what we're measuring versus how carriers are delivering information."
>
> – Tom Nightingale, Vice President, Transportation Logistics, GENCO

Because it operates a major load-matching board used by shippers, carriers, and brokers, DAT also has a good handle on metrics related to capacity. "We can show capacity variations by geography and season, so shippers know when capacity constraints in the market are tight and when they're loose," Galantine says. "That can help shippers evaluate individual carriers — who's delivering and holding to their bid when capacity is tight, and who's offering trucks at a higher rate."

Although a shipper might be concerned mainly with contract rates, it's a good idea to keep an eye on the spot transportation market as well, suggests Mark Montague, industry pricing analyst at DAT Solutions. That's because a sustained rise or fall in spot rates usually portends a similar movement in the contract market.

"A calm spot market is a sign to shippers that it's a good time to negotiate," says Montague. Shippers are likely to get better contract rates at that time. "If spot market rates start to percolate up, it's time to get engaged with contract carriers and lock in some capacity," he adds.

From Data to Dialog

Whichever metrics a shipper chooses to track, the raw data — drawn from TMS solutions, EDI platforms, auditing and billing systems, and other transactional systems — needs to be processed, then presented in a format that's easy to read and understand. GENCO, for example, feeds data from its TMS, proprietary middleware system, and EDI system into a business intelligence tool. "We run those analytics daily," Nightingale says.

When she worked as a transportation executive, Keane and her team automatically received much of the data for carrier metrics from the company's EDI system, which provided a date and time stamp for each transaction. "Shippers can import that data into a spreadsheet and create a macro to do the evaluations," she says. Shippers can then compare this information with yard management data to find out, for example, if a shipment arrived late and if the carrier sent advance warning about that problem.

No Surprises

Many shippers and carriers use carrier metrics as the basis for regular performance reviews. Keane recommends sending each carrier a scorecard every week. "That way, nothing is ever a surprise, and both parties have an ongoing dialog," she says. Shippers should clearly spell out their performance requirements in a carrier guide — for example, 98 percent on-time delivery or 100 percent EDI compliance. If a carrier misses the mark three or four weeks in a row, it's time for a serious conversation.

NFI works with each customer to compile a list of required performance metrics, then delivers the results at whatever intervals the shipper requires. "Some are weekly, some are monthly, some are quarterly," says Holt. The carrier also meets with each shipper every quarter to discuss any trends the numbers indicate. If they identify a problem, they can trace it back to its root cause and determine how to solve it.

The problem might lie in the carrier's operations, or it might originate on the shipper's side — for example, delays due to a loading dock bottleneck. Either way, it's important to take a hard look at the data and try to understand what it conveys. "Then you can create action items and activities around fixing the problems," Holt says.

One way to get to the root of a low KPI is to parse the data behind it. For instance, consider a trucking company whose score for on-time delivery is 95 percent, when the shipper requires 98 percent.

"You can drill down by product line, origin, lane, and customer to identify potential areas of focus," says Sherman. The carrier might actually be doing well except for two lanes, which drag down the score. Once the shipper and carrier pinpoint this problem, they can solve it.

Keeping Communication Open

Besides contacting carriers immediately when the metrics pointed to problems, Keane discussed the KPIs with each of her carriers in formal meetings held every three, six, or 12 months, depending on the carrier's size.

GENCO sends carriers a scorecard every month. "Then we schedule a subsequent call, particularly with our larger carriers," says Nightingale. "We include our procurement team and the carrier's operational and/or business representatives."

If the numbers look great, the carrier is happy to get that news. If the scores point to problems, carriers appreciate hearing that as well. "It tends to open a healthy dialog about what we're measuring versus how they're delivering information," Nightingale says.

Sometimes it turns out that a low score comes not from a performance failure, but from a data quality issue—for example, an inaccurate code in an EDI message, he adds.

Besides fueling conversations about service quality, a carrier report card might help a shipper obtain more favorable freight rates. "Shippers can use the scorecard as a negotiating tool," says Zygmunt. "Or they can look at it to see where rates stack up against the aggregate." This is similar to going online to see what retailers are charging for a product you want to buy, establishing a price point before deciding where to buy.

At GENCO, scorecards can influence how much capacity the company buys from particular carriers in general, or for particular lanes. "Some carriers have sweet spots—power lanes they're eager to fill—and their service performance is wonderful on those lanes," says Nightingale. "Other carriers are over capacity in certain lanes, and their service performance tends to reflect that."

Identifying Strategies

NFI uses some of its metrics to help shippers make strategic decisions that could save them money. "We track empty miles and empty cost within our networks, and how much this is affecting the customer," Holt says. "Then we talk about the ability to collaborate—even with other customers—to reduce costs." For example, the company might pair two of its shippers to create full roundtrips and eliminate empty miles.

However shippers decide to apply carrier metrics, it's important to use them as tools for keeping carriers informed. The goal is to stimulate conversations that reinforce your transportation partnerships.

"As long as shippers use scorecards in a collaborative way, and to improve rather than to beat a carrier partner over the head, it's a win-win," says Keane. ■


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2015 TRUCKING PERSPECTIVES

Inbound Logistics' exclusive trucking market research report delivers shipper and motor carrier insights into trucking challenges and trends.

BY JOSEPH O'REILLY

Capacity has become an inexorable focal point in the U.S. transportation and logistics sector over the past several years. Carriers and asset-based service providers alike have long proselytized the inevitable Armageddon likely to strike as freight volumes rebound and baby boomer drivers retire. Shippers have alternated between cynicism and belief. It's the yet-to-happen reality that consumes the here and now.

Trucking companies responding to *Inbound Logistics*' 2015 Trucking Perspectives survey by and large see an economy on the make — 54 percent expect static growth in the near term, while 40 percent see the economy trending upward. Only six percent forecast conditions getting worse.

Relative optimism aside, carriers are notably less positive about conditions than they were in 2014, when close to 75 percent indicated growth was trending upward. Many concerns on the global front — notably China's sputtering economy and currency devaluation — could impact U.S. exports and domestic job growth. Global stock market volatility has been sharp. U.S. consumer sentiment dropped to a one-year low in September 2015.

On the domestic front, capacity worries remain an important undercurrent in the transportation space. In some lanes, and for certain types of equipment, the market is already tightening. But a precipitous drop in oil prices, largely driven by a glut of North American production, provided shippers and carriers with a reprieve in 2015.

Shippers that migrated to more economical rail/intermodal services have been lured back by cheaper and faster over-the-road options. The market demands it. The continuing evolution of e-commerce and omni-channel management places a premium on speed. Carriers have been able to reallocate fuel cost savings to help recruit drivers with more lucrative enticements.

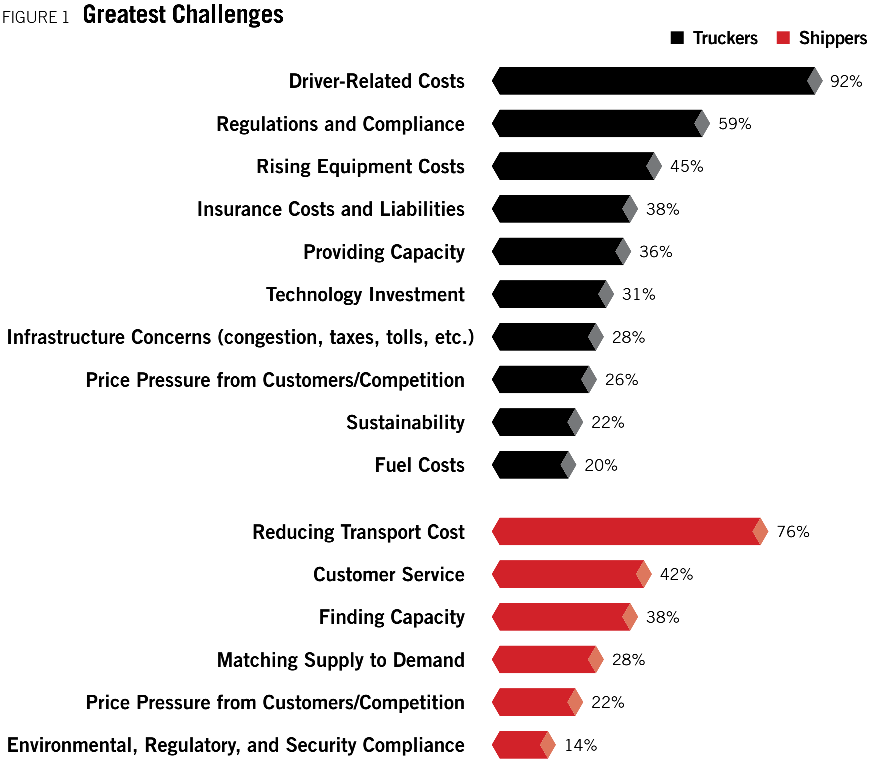
The U.S. trucking market is a dynamic force. Shipper proclivities year to year reflect the volatility of supply and demand, and offer a good indication of where the economy is trending. 2015 has been no less intriguing.

ASSETS OR NOT?

XPO Logistics' recent $3-billion acquisition of Con-way offers a pretty good idea of how industry appreciates capacity. The third-party logistics (3PL) provider has long maintained an asset-light profile. But its decision to buy the second-largest U.S. less-than-truckload (LTL) carrier was predicated on listening to customer demand. "If you don't have assets, you're not sitting at the adult table," said XPO Logistics Chairman and CEO Brad Jacobs on a recent investor's call announcing the acquisition.

Shippers value carriers that have dedicated capacity. As the

FIGURE 1 **Greatest Challenges**



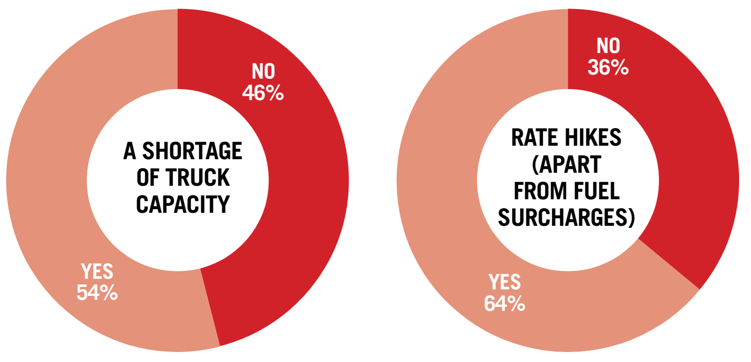
Trucking Perspectives Methodology

Inbound Logistics' annual Trucking Perspectives market insight report includes input from both over-the-road carriers and shippers to provide a comparative analysis supported by empirical data and anecdotal observations. Our outreach comprises two parts.

First, *IL* solicited more than 200 trucking companies to complete a questionnaire that documents their assets, service capabilities, operational scope, and areas of expertise. We also asked carriers to comment on challenges and opportunities in today's market.

Secondly, *Inbound Logistics* reached out to more than 100 unique freight shippers to comment on industry trends, regulatory challenges, and their partnerships with carriers.

FIGURE 2 **SHIPPERS: Have you experienced…**



market tightens, it will become an invaluable asset.

In 2015, carriers on average report fleets with 3,352 units, up from 3,268 last year. Just five years ago, the average was 2,542 units. In terms of equipment, trucking companies own 7,536 trailers—compared to 7,252 in 2014. Attrition and consolidation continue to shape the truck fleet.

Driver availability remains the topic du jour. Many carriers are stepping up recruitment efforts to attract new talent. Some are leveraging the drop in fuel prices to help subsidize higher pay.

Trucking companies report on average 3,011 drivers (owner operators included) compared to 2,867 drivers in 2014. Coming out of the recession in 2011, headcount was 2,507. Carriers are sensitive to demographic shifts and how labor recruitment, retention, and training impact their business. Turnover is a huge cost. Estimates peg the price of recruiting and training one new driver at $5,000. As expected, 92 percent of truckers polled in this year's Trucking Perspectives identify driver-related costs as their greatest challenge—compared to 89 percent in 2014 (*see Figure 1*).

Carrier outlay inevitably bleeds to the shipper, and ultimately to the end consumer. That's why reducing transport costs remains the top concern among freight buyers, according to 76 percent of survey respondents—followed by customer service (42 percent) and finding capacity (38 percent). It's worth noting that shipper sentiment toward cost reduction and customer service in 2014 was considerably more balanced—46 percent to 44 percent.

Why the change? For one, only 54 percent of shippers in 2015 report experiencing a shortage of capacity, compared to 78 percent in 2014 (*see Figure 2*). By the same token, 89 percent experienced rate hikes apart from fuel surcharges in 2014. This year, only 64 percent of freight buyers responded in kind.

Even more telling, 90 percent of shippers cite price as the most important factor to consider when vetting truck partners (*see Figure 3*), followed by reliability (82 percent), customer service (62 percent), and capacity (52 percent). This represents a significant shift from 2014, when reliability topped the list, followed by pricing.

Clearly, shippers still believe they have leverage in the market to negotiate with carriers. It remains to be seen how long that will last.

Technology is another important facilitator. To point, 31 percent of truckers identify IT investment as a challenge. Carriers need to acquire the appropriate transportation management, dispatch, and optimization systems to improve yields and increase efficiency. This includes equipment as well. Trailer skirts and tails that advance fuel economy are growing increasingly popular.

From a network perspective, a lot of latent capacity in the market goes unused—whether it's within urban courier networks or private fleets. A number of different IT vendors provide platforms that give users visibility into capacity. This way they can better utilize assets, build more continuous moves, and ultimately reduce deadheads. Elsewhere, the idea of crowdsourcing unused space using Uber-type technology continues to gain traction.

While labor remains a constraint, technology and innovation may soon provide yet another alternative. Truck manufacturers are toying with self-driving prototypes. Germany-based Daimler, for example, has been piloting autonomous rigs in Nevada during the past year. Mainstream deployment in Europe could happen by 2020.

REGULATION CONSTERNATION

Legislators have proposed another solution to ease the truck driver crisis, eliciting mixed reaction from public and private stakeholders. The latest highway bill circulating Congress

FIGURE 3 **SHIPPERS: What are the most important factors to consider when choosing a motor carrier?**

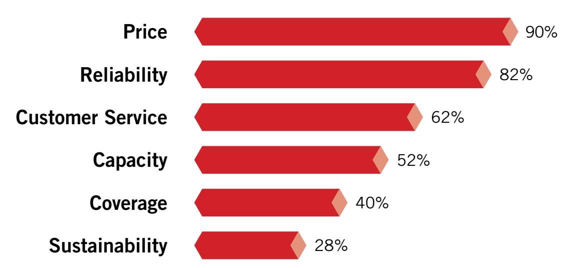
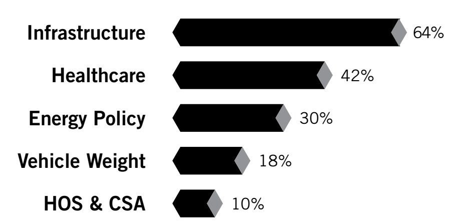


FIGURE 4 **TRUCKERS: What legislative issues have the greatest impact on your business?**

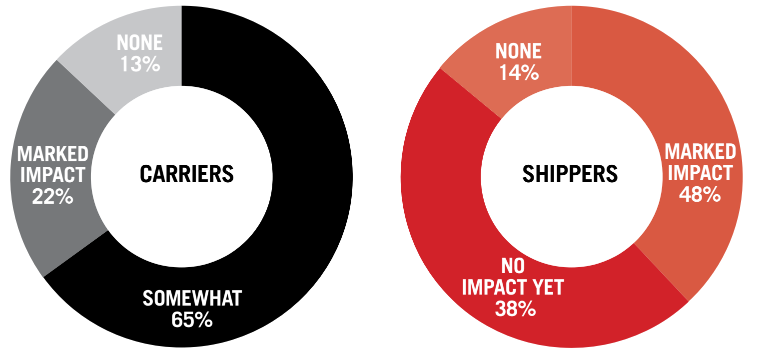


includes a provision that would lower the minimum truck-driving age to 18 for interstate commerce. Currently, teenagers can only operate rigs within a state's borders.

It's a divisive issue that will likely be jettisoned in favor of compromise, but it presents a realistic alternative.

For many in the trucking industry, however, government regulation is a bane. Freight carriers and buyers have long suffered from overbearing and onerous legislation that impedes productivity and increases costs. Apart from driver recruitment and related costs, 59 percent of trucking respondents cite an oppressive regulatory environment as their second-greatest challenge.

FIGURE 5 **What impact have Hours-of-Service regulations had on your operations?**



While the public sector widely supports efforts to improve safety and security on U.S. highways and byways, it has done little to improve the crumbling infrastructure necessary to support interstate and global commerce. It's worth reiterating that Congress has passed 33 extensions over the past six years to keep the Highway Trust Fund solvent. It's an inconvenient, and ironic, contrast.

Infrastructure remains the most impactful legislative issue on the docket, according to 64 percent of truckers. Healthcare (42 percent), energy policy (30 percent), vehicle weight (18 percent), and Hours-of-Service/Compliance, Safety, Accountability (10 percent) round out the list (*see Figure 4*).

The debate over increasing gross vehicle weights has become a flashpoint in the transportation industry. Railroads have sided with public safety advocates who oppose any change to the existing 80,000-pound limit for interstate commerce. Given the

Riding Shotgun

The U.S. trucking industry provides an array of services, from mud-flapping nationwide truckload shipments to white-glove, last-mile delivery—and everything in between. Here's an overview of carrier services, geographic scope, and assets based on Trucking Perspectives survey responses.

CAPACITY

Average Fleet Size (tractors and vans)	3,352 units
Average Trailer Fleet	7,536 units
Average Number of Drivers (owner operators included)	3,011

OPERATING AREA

North America	64%
U.S. Only	36%
Global	29%

TRUCKING SERVICES

Truckload	85%
Logistics Services	69%
Expedited	62%
Dedicated Contract Carriage	61%
Less-than-Truckload	55%
Intermodal	52%
Refrigerated	44%
Flatbed	44%
Bulk	35%
Final Mile	30%
White Glove	27%
Household Goods	26%
Motor Vehicle Carrier	16%
Tank Car	16%
Package	4%

CERTIFICATIONS

SmartWay	94%
HazMat	78%
C-TPAT	62%
Free And Secure Trade (FAST)	41%
Partners In Protection (PIP)	29%
ISO	27%
ACC Responsible Care	16%

VERTICAL SPECIALTY

Food & Beverage	82%
Retail	81%
Freight All Kinds	79%
Automotive	79%
Construction & Building Materials	78%
Valuables (electronics, pharma, jewelry)	64%
Chemicals	60%
Agriculture	57%
Furniture	54%
Oil & Gas	22%

downward fuel price trend, trucking has become a more competitive option. The railroads view any increase in tonnage as a competitive disadvantage.

Meanwhile, motor freight carriers and shippers are still coming to terms with the Federal Motor Carrier Safety Administration's (FMCSA) Hours-of-Service (HOS) and Compliance, Safety, Accountability (CSA) mandates—both of which have increased costs. Industry appears to be more receptive and/or less reactive to regulations that improve safety and quality. For example, 50 percent of shippers have not experienced a noticeable cost or service impact on operations because of CSA scorecarding—25 percent have. That said, freight buyers are largely insulated because the burden of responsibility ultimately falls on carriers and brokers.

HOS, on the other hand, remains a third-rail topic for the trucking industry. In 2015, 87 percent of trucking respondents report that the HOS rules have had an impact on their operations—while 22 percent cite a "marked impact" (*see Figure 5*). This follows 2014 data. Shipper reactions remain mixed—48 percent acknowledge that HOS has had a "marked impact," while 14 percent have seen no impact whatsoever. The remaining 38 percent expect to eventually see one.

Government's decision to roll back two important provisions in the new rules—that a driver's 34-hour restart include two 1 a.m. to 5 a.m. periods, and the limitation of the restart's use to once per week—was widely applauded. FMCSA will need to conduct further study before a final decision is ultimately made regarding enforcement.

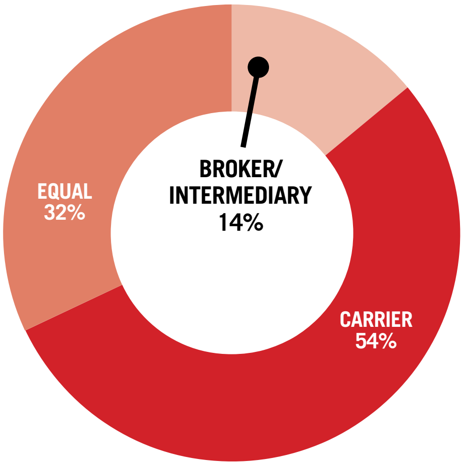
The electronic on-board recorder (EOBR) mandate, which is part of the HOS guidelines, has been well received by the trucking industry. Many carriers see the requirements as inevitable—while also recognizing the value of automating driver data collection. Eighty-seven percent of surveyed truckers have already equipped their fleets with EOBRs.

BROKERING CHANGE

On the brokerage side, change is rampant. UPS' acquisition of Coyote Logistics and the XPO-Con-way merger reflect ongoing contraction within the industry. Freight brokerage is a lucrative business in good times and bad. When capacity is tight, service providers help shippers find space and empower carriers to seek more backhaul opportunities. In a soft market, brokers help carriers find loads and provide freight buyers with leverage to cost compare different lanes. Venture capital is taking notice. Investors see opportunities to further consolidate a very fragmented space.

The growth of megabrokers will invariably have an impact on shippers as they control more of the market, including pricing. As intermediaries become more technologically savvy, and develop value-added capabilities beyond transactional, the value proposition only grows. More shippers, especially small and mid-sized companies, will likely seek their services.

FIGURE 6 **SHIPPERS: What is more important, your relationship with your carrier or with your broker/intermediary?**



An interesting dichotomy still exists between brokers and carriers, and how shippers align with both. XPO's Con-way acquisition, which was driven by customer demand, reveals how important dedicated capacity is in the minds of shippers—especially as the market tightens.

Fifty-four percent of surveyed shippers say they value carrier partners more than brokers—compared to 56 percent last year (*see Figure 6*). In 2012, only 38 percent acknowledged as much, which may offer a clue as to where shippers see the capacity pendulum swinging. By comparison, only 14 percent prefer brokers exclusively; and 32 percent hold both brokers and carriers in similar esteem.

Invariably, shippers will likely have to lean on both carrier partners and brokers, and benchmark off both, as they evaluate their transportation needs moving forward.

2015 TOP 100 TRUCKERS

As always, *Inbound Logistics*' annual Top 100 Truckers directory brings Trucking Perspectives full circle with an in-depth index of carriers that match the diverse needs of the shipping community.

IL editors selected this year's list from a pool of 200-plus trucking companies, evaluating surveys, conducting online research, and talking with truckers and shippers alike. This guide serves as a benchmark for the types of services transportation buyers value when looking for new partners or evaluating current ones.

The Top 100 list offers a snapshot of the trucking segment, including large truckload and LTL carriers with global inroads and niche-specific regional haulers that get their white gloves dirty delivering to the final mile.

Together, Trucking Perspectives and the Top 100 Truckers directory provide a comprehensive guide to help you find partners that will put your company in the driver's seat. ■

TOP 100 TRUCK

COMPANY	URL	PHONE	GENERAL INFORMATION: TRACTOR AND VAN FLEET SIZE	TRAILER FLEET SIZE	NUMBER OF DRIVERS (INCLUDING OWNER OPERATORS)	USE ELECTRONIC ON-BOARD RECORDERS	UNION STATUS	PUBLIC OR PRIVATE	AREAS SERVED/ OPERATING AREAS: GLOBAL SERVICES	NORTH AMERICA	U.S. ONLY	NATIONWIDE (48 STATES)	REGIONAL/MULTI-REGIONAL
A. Duie Pyle	aduiepyle.com	800-523-5020	918	2,162	1,150	●	N	PRIV			●		●
A&R Logistics	ARDoingItRight.com	800-542-8058	750	1,100	750	●	N	PRIV	●	●			
AAA Cooper Transportation	AAACooper.com	334-793-2284	2,500	5,300	3,700	●	N	PRIV	●	●			
ABF Freight	abf.com	479-785-8700	5,100	20,400	7,500	●	B	PUB	●	●			
All State Express	allstateexpress.com	877-742-5875	200	90	225	●	N	PRIV		●			
ATS	atsinc.com	800-MEET-ATS	1,310	3,925	1,100		N	PRIV	●	●			
Averitt Express	averittexpress.com	800-283-7488	4,603	13,400	DNR	●	N	PRIV	●	●			
Bennett International Group	bennettig.com	770-957-1866	1,586	1,422	2,723	●	N	PRIV	●	●			
Bison Transport	bisontransport.com	204-833-0000	1,400	4,000	1,676	●	N	PRIV		●			
Brown Trucking	browntrucking.com	770-482-6521	1,094	5,100	1,079	●	N	PRIV			●		●
Bulkmatic	bulkmatic.com	800-535-8505	DNR	1,200	500	●	N	PRIV		●			
C.R. England	crengland.com	801-972-2712	4,260	5,923	5,655	●	N	PRIV		●			
Cardinal Logistics Management	cardlog.com	704-789-2070	3,500	8,700	4,500	●	N	PRIV			●	●	
Cargo Transporters	cgor.com	828-459-3401	2,080	1,600	500	●	N	PRIV			●	●	
Carlile	carlile.biz	907-276-7797	1,900	1,500	375	●	N	PRIV	●	●			
Celadon Trucking	celadontrucking.com	800-235-2366	3,450	9,800	2,990	●	N	PUB		●			
Central Freight Lines	centralfreight.com	800-782-5036	1,884	6,853	DNR	●	N	PRIV			●		●
Central States Trucking	cstruck.com	630-787-8773	3,500	3,500	1,500	●	N	PUB			●	●	
CEVA Logistics	cevalogistics.com	877-714-8001	4,025	1,400	767	●	B	PRIV	●	●		●	
Challenger Group	challenger.com	800-265-6358	1,500	3,000	2,000	●	N	PRIV	●	●			

ERS 2015

KEY TO ABBREVIATIONS

U	Union
N	Non-union
B	Both union and non-union
DNR	Did not report

AREAS OF SPECIALIZATION

Agriculture	Automotive	Chemicals	Construction/Bldg. Mat'ls.	Food & Beverage	Freight (All Kinds)	Furniture	Retail	High Value	Oil & Gas
●	●	●	●	●	●	●	●	●	
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TRUCKING SERVICES

LTL	TL	Package	Expedited	Logistics Services	Dedicated Contract Carriage	Flatbed	Intermodal	Household Goods	Bulk	Motor Vehicle Carrier	Refrigerated	Tanker	White Glove	Final Mile
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CERTIFICATIONS

C-TPAT	ACC Responsible Care	Free and Secure Trade (FAST)	Hazmat	ISO	Partners in Protection (PIP)	SmartWay
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Information supplied by trucking companies; where they did not provide data, historical and website information was used.

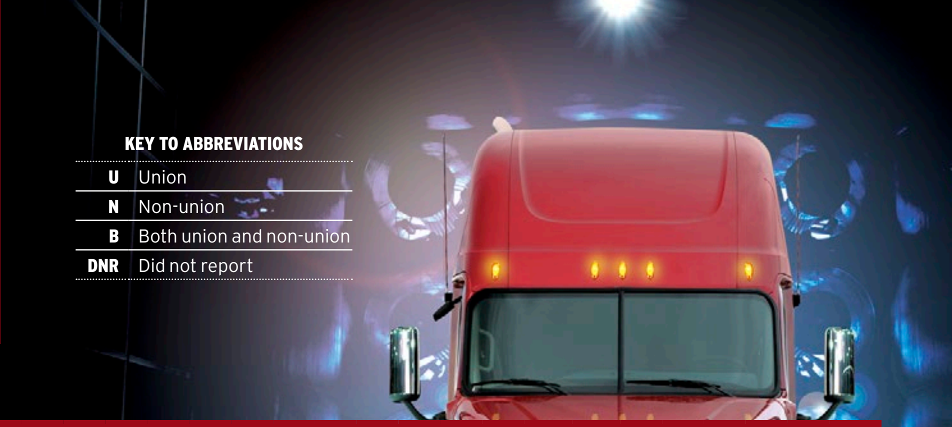
TOP 100 TRUCK

COMPANY	URL	PHONE	GENERAL INFORMATION						AREAS SERVED/ OPERATING AREAS				
			TRACTOR AND VAN FLEET SIZE	TRAILER FLEET SIZE	NUMBER OF DRIVERS (INCLUDING OWNER OPERATORS)	USE ELECTRONIC ON-BOARD RECORDERS	UNION STATUS	PUBLIC OR PRIVATE	GLOBAL SERVICES	NORTH AMERICA	U.S. ONLY	NATIONWIDE (48 STATES)	REGIONAL/MULTI-REGIONAL
Colonial Cartage	atlantabonded.com	770-424-1000	85	225	90	●	N	PRIV			●		●
Colonial Freight Systems	cfsi.com	865-966-9711	300	500	330	●	N	PRIV			●	●	
Con-way Freight	con-way.com/en/freight	734-994-6600	8,750	24,500	13,980	●	N	PUB	●	●			
Con-way Truckload	true2blue.com	417-623-5229	2,506	7,800	2,976	●	N	PUB		●			●
Continental Expedited Services	shipces.com	931-472-0392	75	150	125		N	PRIV		●			
Covenant Transportation Group	covenanttransport.com	423-463-3266	2,850	6,600	3,900	●	N	PUB		●			
Crete Carrier Corporation	cretecarrier.com	800-998-8000	5,357	12,892	5,159	●	N	PRIV			●	●	●
CRST International	crst.com	800-736-2778	4,400	7,290	7,200	●	N	PRIV			●	●	
Daily Express	dailyexp.com	800-735-3136	300	500	300		N	PRIV		●			
Dart Transit Company	dart.net	800-366-9000	1,875	5,789	1,875	●	N	PRIV		●			
Daseke	daseke.com	972-248-0412	2,000	3,600	DNR	●	N	PRIV	●	●			
Daylight Transport	dylt.com	800-468-9999	500	100	180		N	PRIV		●		●	
Dayton Freight Lines	daytonfreight.com	937-415-1715	1,228	3,109	1,845	●	N	PRIV			●		●
Epes Transport System	epestransport.com	336-931-9792	1,121	5,500	1,350	●	N	PRIV		●			
Erb Group of Companies	erbgroup.com	519-662-2710	900	1,250	950	●	N	PRIV		●			
Estes Express Lines	estes-express.com	866-378-3748	7,221	25,347	7,745	●	N	PRIV	●	●			
Evans Network of Companies	evansdelivery.com	800-666-7885	2,850	DNR	2,850		N	PRIV			●	●	
FedEx Custom Critical	customcritical.fedex.com	800-762-3787	1,200	500	2,000	●	N	PUB	●	●			
FedEx Freight	fedex.com	800-463-3339	14,400	43,526	18,000	●	N	PUB		●			
FedEx Ground	fedex.com	800-463-3339	30,000	13,000	34,000	●	N	PUB		●	●		

ERS 2015

KEY TO ABBREVIATIONS

U	Union
N	Non-union
B	Both union and non-union
DNR	Did not report



AREAS OF SPECIALIZATION										TRUCKING SERVICES															CERTIFICATIONS						
AGRICULTURE	AUTOMOTIVE	CHEMICALS	CONSTRUCTION/BLDG. MAT'LS.	FOOD & BEVERAGE	FREIGHT (ALL KINDS)	FURNITURE	RETAIL	HIGH VALUE	OIL & GAS	LTL	TL	PACKAGE	EXPEDITED	LOGISTICS SERVICES	DEDICATED CONTRACT CARRIAGE	FLATBED	INTERMODAL	HOUSEHOLD GOODS	BULK	MOTOR VEHICLE CARRIER	REFRIGERATED	TANKER	WHITE GLOVE	FINAL MILE	C-TPAT	ACC RESPONSIBLE CARE	FREE AND SECURE TRADE (FAST)	HAZMAT	ISO	PARTNERS IN PROTECTION (PIP)	SMARTWAY
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Information supplied by trucking companies; where they did not provide data, historical and website information was used.

TOP 100 TRUCK

COMPANY	URL	PHONE	GENERAL INFORMATION: TRACTOR AND VAN FLEET SIZE	TRAILER FLEET SIZE	NUMBER OF DRIVERS (INCLUDING OWNER OPERATORS)	USE ELECTRONIC ON-BOARD RECORDERS	UNION STATUS	PUBLIC OR PRIVATE	AREAS SERVED/ OPERATING AREAS: GLOBAL SERVICES	NORTH AMERICA	U.S. ONLY	NATIONWIDE (48 STATES)	REGIONAL/MULTI-REGIONAL
FLS Transport	flstransport.com	514-739-0939	120	225	130	●	N	PRIV		●			
Frozen Food Express (FFE)	ffeinc.com	214-630-8090	747	1,231	1,025	●	N	PRIV			●	●	
Gale Triangle/ Performance Team	performanceteam.net	562-345-2271	724	1,450	818	●	U	PRIV	●		●	●	●
Groendyke Transport	groendyke.com	800-843-2103	1,023	1,496	939	●	N	PRIV		●			
Heartland Express	heartlandexpress.com	800-451-4621	4,878	14,372	DNR	●	N	PUB			●	●	●
Highland Transport	highlandtransport.com	905-513-2014	1224	588	224	●	B	PUB		●			
Holland	hollandregional.com	866-465-5263	4,208	7,119	6,395		U	PUB		●			
Hub Group Trucking	hubgroup.com	800-964-2515	2,915	29,110	2,752	●	N	PUB		●			
J.B. Hunt Transport	jbhunt.com	800-452-4868	13,932	104,747	15,150	●	N	PUB	●	●			
Kenan Advantage Group (KAG)	thekag.com	800-969-5419	6,822	9,448	8,896	●	N	PRIV		●			
KLLM Transport Services	kllm.com	601-936-5633	2,300	3,300	2,400	●	N	PRIV			●	●	
Knight Transportation	knighttrans.com	602-606-6315	4,282	11,487	4,738	●	N	PUB	●	●			
Lakeville Motor Express	lakevillemotor.com	701-318-4448	300	1,250	350	●	B	PRIV		●			
Landstar	landstar.com	877-696-4507	8,932	13,372	8,932	●	N	PUB	●	●			
Lily Transportation Corp.	lily.com	781-247-1325	398	553	500	●	U	PRIV		●			
Lynden Transport	lynden.com	206-575-9575	240	1,400	285	●	B	PRIV	●	●			
Marten Transport	marten.com	888-470-9958	2,536	4,240	2,536	●	N	PUB		●			
Melton Truck Lines	meltontruck.com	918-234-8000	1,150	2,000	1,100	●	N	PRIV		●			
Mercer Transportation	mercer-trans.com	502-625-3487	2,500	2,700	2,500	●	N	PRIV		●			
Miller Transporters	millert.com	601-709-5901	431	1,080	415	●	B	PRIV		●			

ERS 2015

KEY TO ABBREVIATIONS

U	Union
N	Non-union
B	Both union and non-union
DNR	Did not report

	AREAS OF SPECIALIZATION										TRUCKING SERVICES															CERTIFICATIONS						
	AGRICULTURE	AUTOMOTIVE	CHEMICALS	CONSTRUCTION/BLDG. MAT'LS.	FOOD & BEVERAGE	FREIGHT (ALL KINDS)	FURNITURE	RETAIL	HIGH VALUE	OIL & GAS	LTL	TL	PACKAGE	EXPEDITED	LOGISTICS SERVICES	DEDICATED CONTRACT CARRIAGE	FLATBED	INTERMODAL	HOUSEHOLD GOODS	BULK	MOTOR VEHICLE CARRIER	REFRIGERATED	TANKER	WHITE GLOVE	FINAL MILE	C-TPAT	ACC RESPONSIBLE CARE	FREE AND SECURE TRADE (FAST)	HAZMAT	ISO	PARTNERS IN PROTECTION (PIP)	SMARTWAY
	●	●	●	●	●	●	●	●	●		●	●		●	●		●	●				●		●		●		●			●	●
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Information supplied by trucking companies; where they did not provide data, historical and website information was used.

TOP 100 TRUCK

COMPANY	URL	PHONE	GENERAL INFORMATION: TRACTOR AND VAN FLEET SIZE	TRAILER FLEET SIZE	NUMBER OF DRIVERS (INCLUDING OWNER OPERATORS)	USE ELECTRONIC ON-BOARD RECORDERS	UNION STATUS	PUBLIC OR PRIVATE	AREAS SERVED/ OPERATING AREAS: GLOBAL SERVICES	NORTH AMERICA	U.S. ONLY	NATIONWIDE (48 STATES)	REGIONAL/MULTI-REGIONAL
National Retail Systems	nationalretailsystems.com	201-330-1900	1,200	6,500	900	●	U	PRIV		●		●	
New England Motor Freight	nemf.com	908-965-0100	2,000	6,000	1,732	●	B	PRIV			●		●
New Penn	newpenn.com	800-285-5000	850	1,700	1,255	●	U	PUB		●			
NFI	nfiindustries.com	877-312-7207	2,384	8,200	2,900	●	N	PRIV	●	●			
Nussbaum Transportation	nussbaum.com	800-622-9741	305	650	295	●	N	PRIV			●	●	
Oak Harbor Freight Lines	oakh.com	253-288-8300	525	2,000	800	●	B	PRIV		●			
Old Dominion Freight Line	odfl.com	800-235-5569	7,100	27,300	9,254	●	N	PUB	●	●			
PAM Transport	pamtransport.com	800-879-7261	1,480	5,170	DNR		N	PUB					
Panther Premium Logistics	pantherpremium.com	800-685-0657	1,100	400	1,100	●	N	PUB	●	●			
Paschall Truck Lines	ptl-inc.com	800-626-3374	1,350	3,000	1,500	●	N	PRIV		●		●	●
Penske Logistics	penskelogistics.com	800-529-6531	2,522	7,275	4,300	●	B	PRIV	●	●			
PITT OHIO	pittohio.com	412-232-3015	1,320	2,049	2,698	●	N	PRIV	●		●	●	
Prime Inc.	primeinc.com	800-848-4560	6,419	11,297	7,380	●	N	PRIV		●			
Quality Distribution	qualitydistribution.com	800-282-2031	3,000	5,500	DNR		N	PUB		●			
R+L Carriers	rlcarriers.com	800-543-5589	13,000	DNR	DNR		N	PRIV	●				
Reddaway	reddawayregional.com	888-420-8960	1,400	3,500	1,600		B	PUB		●			
Roadrunner Transportation Systems	rrts.com	844-290-3569	4,170	5,135	4,281	●	N	PUB	●	●			
Roehl Transport	roehltransport.com	715-591-3795	1,969	4,953	2,015	●	N	PRIV		●			
Ruan	ruan.com	866-782-6669	3,754	8,395	4,203	●	B	PRIV		●			
Ryder System	ryder.com	305-500-4547	139,600	41,900	6,000	●	B	PUB	●	●			

ERS 2015

KEY TO ABBREVIATIONS

U	Union
N	Non-union
B	Both union and non-union
DNR	Did not report

AREAS OF SPECIALIZATION

AGRICULTURE	AUTOMOTIVE	CHEMICALS	CONSTRUCTION/BLDG. MAT'LS.	FOOD & BEVERAGE	FREIGHT (ALL KINDS)	FURNITURE	RETAIL	HIGH VALUE	OIL & GAS
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TRUCKING SERVICES

LTL	TL	PACKAGE	EXPEDITED	LOGISTICS SERVICES	DEDICATED CONTRACT CARRIAGE	FLATBED	INTERMODAL	HOUSEHOLD GOODS	BULK	MOTOR VEHICLE CARRIER	REFRIGERATED	TANKER	WHITE GLOVE	FINAL MILE
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CERTIFICATIONS

C-TPAT	ACC RESPONSIBLE CARE	FREE AND SECURE TRADE (FAST)	HAZMAT	ISO	PARTNERS IN PROTECTION (PIP)	SMARTWAY
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Information supplied by trucking companies; where they did not provide data, historical and website information was used.

TOP 100 TRUCK

COMPANY	URL	PHONE	GENERAL INFORMATION: TRACTOR AND VAN FLEET SIZE	TRAILER FLEET SIZE	NUMBER OF DRIVERS (INCLUDING OWNER OPERATORS)	USE ELECTRONIC ON-BOARD RECORDERS	UNION STATUS	PUBLIC OR PRIVATE	AREAS SERVED/ OPERATING AREAS: GLOBAL SERVICES	NORTH AMERICA	U.S. ONLY	NATIONWIDE (48 STATES)	REGIONAL/MULTI-REGIONAL
Saia LTL Freight	saia.com	800-765-7242	3,700	11,000	4,700	●	N	PUB	●		●		●
Schilli Corporation	schillicorp.com	636-717-2653	350	650	330	●	B	PRIV		●		●	
Schneider	schneider.com	920-592-4200	9,800	32,350	13,800	●	B	PRIV	●	●			
Southeastern Freight Lines	sefl.com	803-794-7300	8,328	8,800	3,890	●	N	PRIV	●		●		●
Standard Forwarding	standardforwarding.com	309-751-0251	1,360	900	450	●	U	PUB			●		●
Superior Bulk Logistics	superiorbulklogistics.com	800-654-7707	940	2,037	DNR		DNR	PRIV		●			
Swift Transportation	swifttrans.com	602-477-7146	18,000	60,000	18,000	●	N	PUB		●			
System Freight	systemfreight.net	609-395-8600	325	2,000	348	●	B	PRIV		●			
Transport America	transportamerica.com	800-329-3927	1,500	4,200	1,700	●	N	PUB		●			
Trimac Transportation	trimac.com	281-985-0000	2,175	4,828	2,596	●	B	PRIV		●			
U.S. Xpress Enterprises	usxpress.com	423-510-3273	6,250	15,850	6,825	●	N	PRIV		●			
UniGroup Logistics	unigrouplogistics.com	636-349-7467	4,000	6,000	3,500	●	N	PRIV	●	●			
Universal	goutsi.com	586-467-1457	4,325	6,290	3,832	●	B	PUB	●	●			
UPS Freight	ltl.upsfreight.com	800-333-7400	5,759	19,391	8,761	●	B	PUB		●			
USA Truck	usa-truck.com	479-471-2500	2,000	6,200	1,900	●	N	PUB		●			
Ward Transport & Logistics Corp.	wardtlc.com	800-458-3625	650	1,150	724	●	N	PRIV			●	●	
Werner Enterprises	werner.com	402-895-6640	7,332	23,765	10,113	●	N	PUB	●	●			
Western Express	westernexp.com	615-259-9920	2,500	6,000	2,750	●	N	PRIV			●	●	
Wilson Trucking Corporation	wilsontrucking.com	540-949-3200	952	2,805	1,079		N	PRIV		●			●
YRC Freight	yrcfreight.com	800-610-6500	8,300	32,800	10,400		U	PUB		●			

ERS 2015

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AREAS OF SPECIALIZATION										TRUCKING SERVICES															CERTIFICATIONS						
AGRICULTURE	AUTOMOTIVE	CHEMICALS	CONSTRUCTION/BLDG. MAT'LS.	FOOD & BEVERAGE	FREIGHT (ALL KINDS)	FURNITURE	RETAIL	HIGH VALUE	OIL & GAS	LTL	TL	PACKAGE	EXPEDITED	LOGISTICS SERVICES	DEDICATED CONTRACT CARRIAGE	FLATBED	INTERMODAL	HOUSEHOLD GOODS	BULK	MOTOR VEHICLE CARRIER	REFRIGERATED	TANKER	WHITE GLOVE	FINAL MILE	C-TPAT	ACC RESPONSIBLE CARE	FREE AND SECURE TRADE (FAST)	HAZMAT	ISO	PARTNERS IN PROTECTION (PIP)	SMARTWAY
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What's *in* Your Warehouse?

BY CHARLIE FIVEASH

THE LATEST WAYS TO OPTIMIZE PROFICIENCY IN YOUR DISTRIBUTION FACILITIES.

> "Progressive improvement beats delayed perfection."
>
> –Mark Twain

Perfection in warehouse operations is an unachievable goal, so supply chain managers must focus on ways to improve operating conditions and upgrade distribution facilities to provide for progressive efficiencies. Keeping up with the latest warehousing trends is key. Because warehouse facilities play a vital role in today's overall supply chain operations, optimizing distribution center (DC) space is a top priority.

Warehouses have advanced significantly since the days of 14-foot ceiling heights and 90-foot truck court depths. With upgraded lighting systems, towering clearance heights, and voice-activated retrieval order fulfillment, modern distribution facilities are equipped to support increased levels of throughput, along with upgraded operational and safety efficiencies.

When the holidays approach, we talk to our kids about the difference between needs and wants when it comes to gifts. They *need* clothes but *want* toys. We *need* a new refrigerator, but we *want* a jacuzzi. Prioritizing warehouse upgrades can be similar to deciding on holiday gifts and home improvements. With the latest tools available to upgrade operational efficiencies in a distribution center, where does a DC manager start when it comes to prioritizing building and technological improvements?

When evaluating potential upgrades in a distribution center, it's important to ask the all-important question: Who's paying? If your company owns and operates its own DC, then any building upgrades will fall into the leasehold improvement bucket and can be depreciated over time, depending on the improvement. If your company leases a warehouse facility, however, then the landlord can fund certain upgrades as part of the lease renegotiation. Even today's most stubborn landlords set aside tenant dollars for building improvements—as long as the requests aim to upgrade the building's functionality. So, whether you want updated warehouse lighting or a new load leveler, don't hesitate to request reasonable facility improvements during a lease renewal discussion.

Automated guided vehicles (AGVs) follow markers or wiring on the warehouse floor and use lasers, voice activation, and magnets for navigation.

Let There Be Light

Lighting upgrades are the most logical place to start when considering steps to reduce long-term costs and energy consumption. The payback on new lighting installations is immediate due to noticeable savings in energy costs. T5 and T8 LED lighting packages provide clean, white illumination in a DC, creating up to 30 percent more light and reducing energy consumption by as much as 50 percent.

"T5 fixtures work better than T8s in a higher ceiling configuration due to the T5's higher lumen output," says Knox Culpepper of Atlanta-based Rooker, a national design/build contractor of distribution facilities.

Fluorescent and metal halide lights have become dated and far less energy efficient. In fact, as of 2010, these antiquated fixtures are no longer manufactured, making replacement bulbs a challenge to find. Unlike metal halide light fixtures—which take time to illuminate—T5 LED systems activate immediately without even flipping a light switch. Forklift or foot traffic functions as the *on* switch in a sensor-activated lighting system.

"Lighting upgrades have expanded beyond the interior walls of a warehouse," explains David McDaniel, partner at national real estate development firm Huntington Industrial Partners, headquartered in Denver, Colo. "We now add clerestory windows for natural light above every third loading door, and LED wall-pack lighting on building exteriors. And parking lot pole lights now have an LED component for better outside lighting and energy savings."

Efficiency and safety are the objectives when choosing dock equipment upgrades. The days of driving a lift truck over a freestanding metal dock-plate into an unsecured empty trailer have long passed. For more than two decades, modernized safety equipment has been in place to prevent forklift accidents when traveling from the loading dock into the trailer.

Advanced dock packages can save time in the loading and unloading process, while also promoting safety. And the cost of dock equipment has remained relatively stable since 2005.

The price tag for loading dock equipment can range from $2,000 for a basic 35,000-pound-capacity edge-of-dock (EOD) leveler to $7,500 for a heavy-capacity "pit-style" leveler, according to Rick Schroyer of Southern Dock Products, a national dock equipment supplier.

An EOD serves the same general purpose as a more expensive mechanical load leveler, as both help forklift drivers navigate the slope differential between the loading dock and a trailer or ocean container.

Durability is also a major factor in dock packages. "Upgrades in new dock equipment can yield a substantial ROI, providing up to 20 years of useful life," notes Schroyer.

The Sky's the Limit

As new distribution centers are constructed, the question of optimal stacking heights comes into play. The progression of higher warehouse ceiling heights has evolved since the 1970s, and racking capabilities are now approaching the 40-foot level.

Warehousing experts and rack consultants continue to debate the optimal ceiling height in a state-of-the-art distribution center. Higher ceilings provide the ability to maximize cube space in a warehouse, but additional storage capacity can create new concerns.

Higher ceilings lead to the need to invest in extended rack systems, specialized high-bay forklifts, and potential sprinkler system upgrades. So, the question remains: How high is too high, and at what point do we reach an inflection point of inefficiency by storing inventory at dangerously high levels?

As stacking heights reach new levels, upgrades in building sprinkler systems may be required by code. Early suppression/fast response (ESFR) systems have been the standard for most modern warehouses built since 1995. But as ceiling capacities reach the 40-foot threshold, in-rack sprinklers may be required by code in most municipalities.

"In-rack systems allow the flow of water to reach pallets in lower rack positions in case of a fire," says Patrick Cordi of Wiginton Fire Systems, a regional fire sprinkler company based in Sanford, Fla. "Otherwise, an ESFR system at 40 feet doesn't generate enough water velocity to douse a burning pallet 30 feet below the sprinkler head."

Major distribution companies favor an

optimal stacking height of 32 feet, according to industry research. Most speculative distribution buildings today, however, are constructed with a 36-foot clearance.

"Increasing ceilings another four feet is a significant expense for a developer, but if the higher ceilings capture the tenant who actually needs 36 feet, then the added height is worth the expense," says McDaniel.

Rack and Roll

When upgrading a warehouse with the latest technology and materials handling equipment innovations, rack systems don't necessarily rack up interest. As stacking heights rise to new levels, however, DC executives are turning an eye to newer warehouse racking concepts.

Rack system innovations take into account maximizing storage capacity, ease of inventory access, and safety. The latest trends in warehouse storage systems include gravity flow, pushback, drive-in, carton flow, and tilt shelving.

Gravity flow and tilt shelving are common in e-commerce facilities or DCs with high order-picking volumes. These systems are popular for fast-moving parcels, consistent with high SKU volumes in an e-commerce facility. Cartons slide down a set of rollers that can be adjusted to an appropriate angle so that the package "flows" to the edge of the rack as the previous order is picked.

As distribution center managers are faced with the dilemma of expanding warehouse capacity, an upgrade to pallet racking may be the answer to maximize throughput and expand storage capacity. One solution is a pushback pallet rack with rollers, which allows up to six pallets to be stored on a single level.

Pushback racks can increase storage capacity in a distribution center by about 50 percent by stacking pallet positions up to six deep from front to back.

With upgraded racking systems come progressions in pallet design. The grocery industry was the first to embrace the idea of plastic pallets, but the trend is gaining traction among traditional dry-goods distributors. While the expense of plastic pallets can be as much as three times the cost of wooden pallets, the useful life of a plastic pallet can extend beyond 15 years, according to global pallet manufacturer Chep USA.

Profiling is another way DC managers get the most out of their space. This strategy involves slotting and staging high-velocity SKUs in order to optimize throughput. Inventory is categorized for easy access in placement and retrieval processes, minimizing transit time between storage racks and loading doors.

Approximately half the labor in a DC is allocated to order selection, so implementing effective slotting and profiling strategies is crucial to achieving productivity in warehouse management. Integrating practical slotting techniques based on shipping velocity can reduce costs and lead to lean operational practices.

While profiling and slotting strategies involve mostly a common-sense approach, warehouse management software (WMS) is available to organizations with high SKU counts. The profiling software tracks historically high inventory velocity, and slots SKUs in strategic pallet and rack positions, reducing travel time in the order retrieval process.

I Hear Voices

In the 1980s, the mental image of materials handling (MH) equipment included propane or diesel forklifts and hydraulic pallet jacks. But in 2015, the term has a more expansive reach. Particularly in modern e-commerce fulfillment facilities, MH equipment has evolved to encompass multi-use conveyors, RFID readers, voice-directed order pickers, and even robotics.

While considered an emerging trend in inventory management, voice-directed retrieval systems were introduced in 1995. Nearly one million workers are using voice

Top 5 Ways to Modernize Your Warehouse

1. **LED lighting–**T5 warehouse lights are relatively inexpensive and provide a quick return on investment due to energy savings.
2. **Voice-directed order management–**New technology has reduced the cost of software and hardware, resulting in more efficient pick speeds.
3. **Slotting/profiling strategies–**SKU proliferation has increased the need for effective inventory placement and racking strategies in a DC.
4. **Loading dock equipment–**Upgrades to dock equipment include multiple varieties of load levelers, dock lamps, and dock locks.
5. **Lean operations–**Implementing a lean warehouse operations program can cost as little as zero, but may yield multiple returns in efficiency and elimination of unproductive activities.


Replacing outdated and worn dock equipment, such as bumpers and loading doors, brings immediate efficiency gains to distribution center operations.

technology in today's workforce, according to industry estimates.

Wearable technology is changing warehouse automation. Instead of holding a clipboard, tablet, laptop, radio, or smartphone, workers can retrieve pertinent data while maintaining unencumbered mobility, increasing safety and productivity through hands-free applications.

Investing in a voice-directed WMS is not as expensive as other technology-driven applications. The ROI payback period is brief—only six to 12 months—and systems are user friendly. The learning curve to train workers on voice-activated systems is only a matter of weeks, and the software is offered in 46 different languages.

As fulfillment centers attempt to operate lean facilities and minimize labor costs, warehouse automation is evolving, particularly in the area of robotics. Automated and vision-guided vehicles (AGVs and VGVs) are surging in popularity, particularly in larger DCs, yielding lower labor costs and fewer injuries associated with operating traditional lift trucks. Integrating AGV/VGVs in distribution centers is sometimes limited by the initial capital investment, but leasing programs from established driver-less equipment suppliers are commonplace today.

Using automation and robotics for repetitive motion functions, high speed requirements, and consistent accuracy is gaining traction in major DCs, replacing repetitive and laborious tasks for humans—such as unloading a floor-loaded ocean container. The industrial robotics market is projected to grow more than six percent annually through 2020, according to a recent *Transparency Market Research* report.

Lean and Green

Lean operating systems were originally adopted to optimize workflows in manufacturing facilities, but DCs have implemented several Lean practices in recent years. Lean inventory management has been the latest focus, but the Lean concept now expands beyond inventory optimization to incorporate waste elimination in operational functions such as motion, waiting, and scheduling.

Distribution center managers today are implementing Lean methods to improve key performance indicators (KPIs) by using Japanese models of operations management, such as the *kaizen* concept of continuous improvement. Recently, the concept of Lean has evolved beyond operational efficiency to include sustainability.

Leadership in Energy & Environmental Design (LEED) sets the standard for sustainable design in commercial construction. The LEED program is administered by the U.S. Green Building Council (USGBC) and uses a point system to establish if a specific property meets one of three tiers in LEED certification: Silver, Gold, or Platinum.

"We build all of our new distribution facilities to a minimum LEED standard," says Dayne Pryor of Panattoni Development, a Newport Beach, Calif.-based developer of distribution properties. "It's up to the tenant to establish further LEED qualifications above our sustainable building standards."

Although LEED certification is more common in new construction, existing DCs can also apply for LEED designation by following the USGBC's compliance and certification point system. LEED-compliant upgrades at a DC include:

- LED lighting systems
- recycled rainwater for landscaping
- solar implementations
- white heat-reflecting thermoplastic polyolefin roof systems
- low-flush toilets
- bicycle racks

As the economy continues to rebound, developers have renewed interest in designing speculative warehouse buildings to LEED standards, and environmentally conscious firms are refocused on sustainability across the supply chain. In fact, most major corporations prefer to do business with vendors, suppliers, and third-party logistics providers that operate in LEED-certified facilities and embrace sustainable initiatives.

In one recent consolidation, OfficeMax leased a speculative 415,000-square-foot DC from Panattoni. The fact that the building was constructed to the LEED Silver standard appealed to the office supply giant, but the tenant was not inclined to pay additional rent for the higher sustainability standard.

"Corporate America wants to operate in LEED-certified facilities, but it's rare that they'll pay additional rent for the designation," Pryor notes.

Here Comes the Sun

Rooftop solar technology is one of the latest trends in creating sustainable distribution facilities. Since 2005, solar energy systems have gained momentum across the country, particularly on the flat rooftops of distribution centers, as roof space is often an idle and underused warehouse component.

In California alone, 4,316 MW of solar electric capacity was installed in 2014, according to the Solar Energy Industries Association. Other states, particularly in the Sun Belt region, have also embraced solar technology as a viable means of power generation—not only for the distribution center itself, but also as a source of power for the local energy grid.

While expensive to install, a solar installation's payback period can be as brief as seven years when factoring in tax credits, according to George Mori, executive vice president of Atlanta-based solar design firm SolAmerica Energy.

Tax credits have been a major driver of recent solar applications across the country. While most state tax credits have already sunset, federal tax credits of 30 percent are still in effect today, but will drop to 10 percent at the end of 2016. Do solar installations make sense without the use of federal tax credits? Apparently so, according to Mori. "Prices on solar installation costs have dropped by as much as two-thirds since 2012," he says.

Manufacturers and other heavy power users have traditionally been the more likely candidates for solar applications. But with the ability to sell solar-generated power into the electrical grid, distribution buildings provide a logical facility solution for a solar farm.

"Industrial rooftops are typically located close to consumers in growth markets, near the higher energy load," Mori adds.

Up on the Roof

A few major industrial landlords, such as Prologis, have taken a slightly different directive with rooftop solar technology. Because most commercial leases provide the landlord with rights to the roof structure, building owners have adopted the approach of integrating industrial rooftops as an additional source of revenue. Rather than entering the solar business themselves, landlords lease roof space to solar integrators—third-party experts who better understand the intricacies of solar operations.

Rooftop solar technology will continue to be a force as installation costs drop and building owners recognize the sustainable and economic viability of solar power as an energy source. Given some of its complexities, harnessing solar energy is still an unknown to warehouse managers and executives, but rooftop solar installations

Features of new construction include deeper truck court depths, ceiling heights above 30 feet, exterior and interior LED lighting, and trailer storage.

5 Features of New Facility Construction

1. **Ceiling heights–**Stacking clearance has emerged well above 30 feet, and is fast approaching 40 feet in order to maximize cube space.
2. **Trailer storage–**A building owner provides a distinct advantage by offering tenants free on-site trailer storage.
3. **LEED certification–**In an improving economy, trends point toward a re-emphasis on environmentally friendly warehouse facilities, returning to similar interest levels from the mid-2000s.
4. **Crossdocking facilities–**DC managers prefer crossdocking over rear-load or front-load facilities, and 500-plus feet of building depth to maximize throughput.
5. **Lighting–**In addition to advancements in LED lighting, trends in new DC construction include clerestory windows (in lieu of traditional skylights) in the concrete panels above the dock doors, allowing natural light to enter the warehouse during daylight hours.

> "The best way to predict the future is to invent it."
>
> –Alan Kay, computer scientist

are gaining momentum. "We still have a lot of runway remaining to promote the solar message to distribution building owners—and the public in general," Mori says. "Rooftop solar can be found money for a building owner."

Leading-edge designs have been a driving force for upgraded features in distribution centers. Distribution tenants today demand a quality facility that not only includes higher racking capabilities, overflow trailer parking, and LED lighting upgrades, but also flatter and stronger floor slabs that are free from cracking and moisture issues. The wet warehouse floor phenomenon, known as sweating slab syndrome, has created serious safety concerns for years, so warehouse professionals are demanding assurances that a distribution center's floor slab is moisture free prior to occupancy.

Aside from structural integrity, warehousing innovations address increases in throughput demand and heightened speed-to-market expectations dominating today's supply chain. In 2015, e-commerce fulfillment centers are refined to meet the demands of same-day and next-day deliveries, and the traditional warehouse of tomorrow will become more specialized and highly automated.

It's Payback Time

With the expense of investing in robotic order retrieval systems, WMS software packages, and auto-guided lift equipment, supply chain executives are forced to evaluate the payback and return on investment for various operating upgrades.

Installing T5 LED lighting, for example, is a minimal capital investment and provides immediate energy savings and lighting enhancements. Similar to LED lighting, basic dock equipment upgrades are inexpensive in relative terms and result in instant loading efficiencies.

On the other hand, expensive upgrades—such as solar panel installations, robotic engineering, and WMS software platforms—warrant extensive research before implementation.

While customer demands in today's e-tail world require faster turnaround times from the dock door to the front door, a variety of high-tech and low-tech implementations create a more productive warehouse.

As futuristic distribution concepts evolve—such as delivery drones for small packages and robotic retrieval systems—capital upgrades will help reduce DC operating costs and promote safety and proficiency.

In short, warehouse operations no longer allow for "business as usual" practices. New initiatives and strategic investments in capital improvements will lead to greater returns in productivity, profitability, and customer satisfaction. Investing in the latest materials handling equipment, WMS technology, and physical building improvements will result in a fully integrated distribution center. ■

FREIGHT AUDIT AND
PAYMENT SERVICES

Cash Is King

Freight audit and payment companies help shippers find the hidden cash in their supply chains by eliminating overbilling, and paying invoices accurately and quickly. Ready to partner with a provider? It's your move.

Cash Is King

Only one in 10 freight invoices is accurate, according to Rick Erickson, global director of Freight Payment Solutions at Minneapolis-based U.S. Bank.

And, as a result, thousands of shippers around the world are leaving money on the table.

This loss in profit is understandable, to a degree. After all, the payment and auditing of invoices can be a complex and confusing process—from product classification coding, to duplicate billings, to detailed general ledgers.

But, thankfully, there is a solution: Shippers can partner with freight bill audit and payment (FBAP) firms to automate their processes, thereby auditing 100 percent of invoices prior to payment.

"Our customers realize a two- to four-percent savings in monthly freight spend by catching invoice errors with our prepayment audit," Erickson says.

Allan Miner, president of Cleveland-based CT Logistics, and Ken Hazen, president and CEO of Memphis, Tenn.-based CTSI-Global, agree, noting that shippers can save anywhere between two and 15 percent of their total freight expenditures by outsourcing their audits.

"And, another eight- to 10-percent savings is possible from benchmarking rates the first year that shippers outsource," Hazen adds.

The most considerable savings—the use of data captured by outsourcers' analytical tools during the freight audit process—is not as obvious.

"Shippers that successfully capture all of their invoice details, including the breakdown of the charges, and then match that data with their shipment data, can leverage this combined dataset and transition freight from a tactical necessity into a strategic asset," says Shannon Vaillancourt, president of Madison, Wis.-based RateLinx.

"The savings that shippers receive from correcting overbilling mistakes is dwarfed by the savings they can receive through the strategic use of the data," he adds.

ECONOMIES OF SCALE

Shippers' outsourcing initiatives, whether they are hiring FBAP firms or other logistics services providers, have increased recently. In fact, according to Capgemini Consulting's *Annual Third Party Logistics Study*, 72 percent of shippers surveyed augmented their use of outsourced logistics in 2015. And, 36 percent of their total logistics expenditures were related to outsourcing.

Yet, many shippers, particularly outside the United States, are still not taking advantage of the wide array of benefits that FBAP firms can provide. Approximately 60 percent of U.S. firms outsource their FBAP projects, according to Hazen. Internationally, that figure drops considerably—to roughly 10 percent.

"I encourage more shippers to take advantage of a third-party FBAP firm's economies of scale, as well as their extensive audit capabilities, data capture, and robust analytical tools," says Keith Snavely, senior vice president, global sales and marketing of McDonough, Ga.-based nVision Global Technology Solutions, Inc. "The data protection that third parties provide is one of the primary benefits of their services, especially when shippers have a sizeable volume of invoices."

Throughout his career in logistics, Tom Zygmunt, manager of marketing and business development for St. Louis-based Cass Information Systems, has personally witnessed the following benefits that FBAP firms provide to their clients, in addition to data protection:

- **Lower processing expenses.** The cost to process an invoice through internal payables systems ranges between $4 and $10. "But with an FBAP firm performing the payment and reporting functions, the internal expenses associated with paying freight invoices are significantly reduced," Zygmunt says.
- **Fewer overcharges.** Aside from the costs related to invoice processing, accidental duplicate payments can account for 0.5 to 1.5 percent of shippers' transportation expenses, according to Zygmunt. But these expenses are eliminated entirely through the assistance of FBAP firms. Zygmunt has also found that FBAP firms' pre-audit services provide shippers an additional one- to five-percent reduction in expenses.
- **Information for transportation management.** "The information that FBAP firms provide—including carrier usage, customers, and traffic lane data, as well as accounting information that allows shippers to be proactive in managing their expenses—can further reduce transportation expenses," Zygmunt explains. "This data helps not only in shipment planning, but also in carrier negotiations. By actively managing this data, FBAP firms can lower shippers' expenses by another 10 to 15 percent."

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■ **A twofold process.** "As shippers pay their freight invoices, their need is twofold," Zygmunt says. "First, they require proper documentation for the payment process. Second, they need to report their transportation costs and configure their accounting systems. Outsourcing to FBAP firms fulfills both those needs."

FUNDAMENTAL AND STRATEGIC

"Automated freight payment and audit is a fundamental, strategic component of a competitive supply chain," Erickson says.

By outsourcing this function to FBAP firms, shippers will reap the following additional benefits:

■ **A single solution.** "Outsourcing to an FBAP firm enables a single freight payment and audit solution for all transportation invoices, which provides visibility across different units and geographies," Erickson says.

■ **Payment extension.** FBAP firms offer innovative cash management solutions that allow shippers to extend their payments for up to 90 days—without having to renegotiate terms or negatively affect their relationships with carriers.

■ **All modes considered.** FBAP firms not only uncover savings for their clients through a 100-percent prepayment audit of invoices, but they also provide these services to every transportation mode, from ocean, to air, to LTL.

■ **Online collaboration.** "FBAP firms enable shippers to act upon strategic supply chain opportunities while collaborating online with carriers to process, pay, and quickly resolve exceptions," Erickson says.

Aside from the cost savings, collaboration, and visibility that outsourced FBAP services provide to shippers, one primary benefit stands alone: the data itself.

"Business intelligence reporting and metrics are delivered to clients via graphic, actionable data so that they can react quickly to their changing logistics needs," Miner says. "This data is real-time, and typically delivered weekly, allowing for quick action on specific areas of concern."

As FBAP firms receive data from carriers, enterprise resource planning (ERP) systems, and suppliers, they can quickly consolidate this information and provide it to shippers.

"Outsourcers' business intelligence capabilities enable shippers to obtain instant access to data, identify any developments in their logistics operations, and then make proper business decisions based upon this data," Hazen says.

Vaillancourt agrees this data allows shippers to verify whether or not their cost estimates are accurate, which helps them improve their budget projections in the future.

"The freight audit services provided by FBAP firms are the final pieces of the puzzle for a shipper," he says. "By using these services, shippers can capture their actual costs, compare them to their shipping systems' estimated costs, and then see how they are complying with their own internal rules.

"By capturing the actual costs from their invoices, and comparing them to their transportation management data, shippers can verify that the estimates used during the routing phase are accurate enough that they do not affect the transportation management system's carrier choice."

As shippers seek potential partners to assist them with their FBAP initiatives, they should also consider a variety of intangibles, including the financial stability and security of the firms they are most interested in.

"While cost is an important factor in shippers' outsourcing decisions, an FBAP partner's lack of financial stability can produce unexpected costs that far outweigh the false savings of a low-price provider," Zygmunt warns. "When shippers consider the large dollar value of the transactions being processed, the financial stability of firms, along with the security they provide, should be key factors in the outsourcing decision."

ISO METRICS

Miner explains that this security can be proven through firms' audited financial statements and International Organization for Standardization (ISO) certification, including ISO 9000 (quality management), 31000 (risk management), and 27001 (information security management). Firms should also have annual Service Organization Control (SOC) 2 Report reviews, and a $1-million Employee Dishonesty Bond, at minimum.

"It is also important that FBAP providers are not dependent upon only a few people for business continuity," Zygmunt says. "The firms should be large enough that they can continue to provide adequate services in the midst of employee turnover."

The FBAP firm's personnel should be well-versed in the transportation industry, as the audit, payment, and information processing of freight invoices should not be their only core competency.

"With industry experience in implementing complex processing systems, firms are also able to meet the unique

internal requirements of large companies," Zygmunt adds.

Global scalability is also important in this day and age of constantly evolving technological applications.

"FBAP firms should have full-service processing centers around the world to not only fulfill shippers' regional requirements, but their global requirements as well," Snavely states. "To do so, firms must be bonded, and use a single application to process on a global scale."

FBAP firms' technology should also be scalable and continuously enhanced. As a further sign of stability, firms must also have the financial resources required for regular technology upgrades.

"By utilizing proprietary software that performs freight accounting metrics, including coding, editing, and validation within their own processes, FBAP firms can eliminate the shipper's need to perform such functions within internal accounting departments," Miner says.

In addition to the comprehensiveness of their software, Miner says FBAP firms' shipper data and business intelligence reporting should be accessible online, 24/7. The firms' sites should also include standard and ad-hoc reports, client-driven report scheduling, and onscreen and email report delivery.

Furthermore, firms should scan all hard copies of carrier invoices, and provide shippers online access to the images for at least seven years. The images should also be available on DVD and CD.

"At times, shippers' freight bills, which require client approval, will need to be edited—an in-process function that should be completed online, 24/7, either by the carrier or the shipper, and accessible on FBAP firms' websites," Miner says. "The

PARCEL SHIPMENT AUDITS: E-COMMERCE GETS ON BOARD

Online sales totaled $304.9 billion in 2014, an increase of 15.4 percent, when compared to 2013's aggregate, according to the U.S. Department of Commerce.

And the growth of the e-commerce industry is even more apparent upon further review of prior statistics—for example, in 2004, online sales "only" totaled $72.3 billion.

"E-commerce business has exploded, and, along with it, so has the use of parcel carriers to deliver goods to individual purchasers," says John N. Mecchella, Esq., president of Congers, N.Y.-based Technical Traffic. "As a result, the volume of shipments made—and the dollars spent by shippers using parcel carriers—has risen dramatically."

At the same time, the average size of overall shipments has decreased, while the average cost per pound of transportation has increased.

"Due to this rise in volume, scrutiny is also increasing," Mecchella explains. "Consumers have become accustomed to 'free' shipping, along with some additional costs if they request a priority service. In many instances, these costs, along with unexpected accessorial and dimensional weight charges, create a sale that is marginal, at best, to the shipper. Therefore, today's audit of a parcel shipment goes well beyond validating the zone and the negotiated rate."

In response, Mecchella believes FBAP firms should be capable of performing an analysis of opportunities within a shipper's existing shipping methodologies to help secure soft savings—savings resulting from a change in shipping practices, coupled with an understanding of the accessorial charges that influence costs.

Because the U.S. Department of Commerce projects e-commerce sales will continue to rise by 12 to 15 percent annually until 2017, Mecchella also says shippers will benefit from data-driven perspectives on parcel costs, especially if they are interested in profiting from this continuous increase in sales.

"By understanding the true cost impact of certain avoidable accessorial charges, or the increased dimensional weight costs of overpacking an item, shippers can potentially reduce their freight as a percent of sale," Mecchella says. "This allows shippers to be more profitable and competitively sharp in the increasingly popular world of e-commerce."

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images of the freight bills, along with all supporting documentation to resolve the issues being questioned, should be easy to view, too, so that errors can be fixed quickly."

TOP-NOTCH CUSTOMER SERVICE

"While all firms provide some type of customer service support, the depth of that service, along with the supporting processes, separate some firms from others," Zygmunt says. "This depth of support is crucial when shippers seek outsourcers to fulfill their FBAP services."

To provide the best customer service possible, FBAP firms should also field all carrier payment calls, meet with carriers to resolve issues, and create efficiencies that benefit both carriers and suppliers. And, FBAP firm staff members should be committed to maintaining outstanding relationships with carriers and suppliers alike.

"Firms should also have the ability to audit all modes of transportation for shippers, including parcel shipments," Miner says. "And they should meet carriers' requirements to obtain refunds for late delivery shipments that are manifested, but not moved; provide address correction; and break down all miscellaneous charges.

"In doing so, certain firms still stand out from the crowd as shippers determine which providers best meet their FBAP needs," he adds.

Overbilling is one main cause of budget deterioration, and is a primary concern of shippers as they outsource FBAP services. Yet, due to firms' rate management systems, which should be customizable to shippers' unique requirements, audits are 100-percent prepaid. In addition, shippers and carriers are allowed to collaborate online to approve and pay invoices. The result: complete elimination of overbilling.

"Accurate and up-to-date processing and business intelligence systems are key to freight invoice processing and payment," Zygmunt notes. "To prevent overcharges and eliminate duplicate payments, these systems must be kept current with carrier prices. They should also be able to rate shipments."

INVOICE ACCURACY: PART AND PARCEL OF THE JOB

As a result of the increasingly complex nature of small parcel shipments, it is difficult for shippers to ensure their invoices are accurate and timely as they fulfill their commitments to carriers.

"High volumes and multiple surcharges, along with contracted delivery guarantees and limited access to information, result in a complicated invoicing process that's rife with potential opportunities for inaccurate and unnecessary costs," says Rick Erickson, global director of Freight Payment Solutions at Minneapolis-based U.S. Bank.

To take control of parcel expenses, high-volume, small parcel shippers are now seeking complete visibility into their parcel usage and expense details. Parcel invoice auditing—at the package level—provides this visibility.

"Best-practice management in the parcel payment process hinges on the ability to extract and audit line-item data on actual parcel shipments and costs," says Tom Zygmunt, manager of marketing and business development for St. Louis-based Cass Information Systems. "The more data that can be extracted, the greater the ability to audit and analyze costs to uncover savings opportunities."

Through line-item data, shippers can then allocate these costs to the proper general ledger accounts, resulting in more accountability at the transactional level, according to Allan Miner, president of Cleveland-based CT Logistics.

To remove the complexity from small parcel audit and payment, Erickson believes FBAP firms should also offer the following services:

- Fully automated solutions that track and report delivery performance
- Pre- and post-payment audits
- Cost recovery automation—without manual intervention
- Identification of incorrect addresses and location coding, thereby preventing repetitive fees
- Invoice processing and payment
- Identification of cost savings opportunities with real-time, dynamic reporting that provides industry-leading visibility into shipment details

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Hazen also advises shippers to build matrix systems to properly manage cash and receivables, so that they do not pay providers too soon or too late. Snavely agrees, adding that invoices should be aged to the negotiated payment terms so that providers receive payments on or before their due dates.

"By utilizing third-party providers, shippers can ensure timely invoice processing and payment through advanced systems," he says.

Negotiating Terms

Aside from using rate management systems, shippers can also negotiate with their carriers.

"As shippers negotiate contracts, rates, and tariffs, they can discuss ways to minimize rate structures and diminish accessorials, potentially reducing overbilling issues even further," Snavely states.

In the meantime, FBAP firms should also address the ways in which transportation costs vary by mode and industry. Firms should not only have expertise in a variety of industries, according to Zygmunt, they should also understand the rate structures for different types of carrier modes.

Web-based analytical tools are critical as well. "FBAP firms should be adept at identifying the line-item detail costs that shippers incur—and then better manage these costs through each of their analytical tools," Snavely adds.

The process of choosing an FBAP firm can be challenging. After all, as competition increases, firms throughout the United States are improving their technological capabilities, financial stability and security, and customer service. But as suppliers conduct their searches, Hazen advises them to consider outsourcing to firms that have multiple capabilities, such as LTL, TL, small parcel, ocean, and rail, along with the audit of domestic and international bills.

"The ability to capture data from all modes and countries, and then combine this information into one common database, is paramount to success," he says.

At the same time, firms should also allocate freight expenses down to shippers' specific account codes, including, but not limited to, their departments, products, and stockkeeping units.

"FBAP firms should know how shippers handle their funds and when carriers get paid," Erickson says. "And they should conduct audits before payments so that money does not have to be recouped later on."

Firms should also enable shippers to interact more collaboratively with their carriers. This collaboration will become increasingly important in the future as the supply of drivers continues to decline. In fact, due to a combination of fewer candidates and more rigorous Hours-of-Service rules, the transportation industry is expected to have a shortage of roughly 240,000 drivers by 2022, according to the American Trucking Associations.

"This undersupply will provide carriers

TMS REIGNS SUPREME

As a whole, transportation management systems have had a positive impact on the FBAP industry, especially in recent years.

"Due to the numerous options that TMS provides, shippers of all sizes can now afford to implement solutions and reap the benefits of not only TMS functionality, but also integrating TMS data in the freight payment process," says Craig Cameron, vice president of sales and marketing at Memphis, Tenn.-based A3 Freight Payment.

According to Cameron, shippers can use the electronic source data that TMS provides in a variety of ways, including, but not limited to:

- **Invoice verification.** "By 'matching' freight invoices to TMS source data, shippers can reliably authenticate each invoice," he says.
- **Elimination of paper invoices.** TMS data enables shippers to transition from paper invoicing to electronic data interchange (EDI) invoicing, as the source data eliminates the need for traditional paper documentation, such as a bill of lading.
- **Data validation.** "TMS can be used to validate a wide array of data elements for audit purposes, including class, weight, origin, and destination," Cameron adds.
- **Enhancement of data reporting.** "By combining TMS data elements and freight payment data into one reporting system, shippers can also enhance their data reporting capabilities," he says. "They also enable accrual reporting."

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more choices as they accept freight from shippers," Erickson states. "Naturally, they will be attracted to the shippers who can work with them collaboratively and transparently. The extent to which firms help shippers become more collaborative and transparent will be crucial in positioning them as 'shippers of choice.'"

MEETING SHIPPER REQUIREMENTS

The value of firms' global presence cannot be overstated. According to Snavely, firms should have multilingual staff members, as well as extensive data capture, imaging technology, and robust exception and collaboration tools that accommodate shipper requirements as they perform their services and interact with carriers worldwide.

"For most shippers, a global solution is necessary," Snavely explains. "To understand currency and time zone conversions, and effectively communicate with employees and carriers that speak other languages, FBAP firms should have brick-and-mortar, full-service processing centers around the globe."

Miner also believes that experience counts, advising shippers to hire seasoned firms with proven track records over multiple decades.

Vaillancourt stresses the significance of technology. "Shippers should partner with FBAP firms that truly have the technology required to do the job, as well as the technical expertise on staff to make any enhancements or customizations that are required to implement shippers' unique rules," he says.

"Shippers should ask themselves: Do the firms have transportation management systems that are capable of rating all of invoices to ensure accurate payment? And can they perform the analytics that are required to help develop strategies to see beyond the data—and find the savings they've been looking for?" he adds.

GLOBAL DATA WAREHOUSE

As more shippers continue to realize the ways in which third-party providers can positively influence their bottom lines, the outsourcing of FBAP services is steadily rising.

INTEGRATION STATION

Although transportation management systems (TMS) provide various benefits to shippers—in particular, an efficient way to determine optimal transportation costs, delivery times, and service levels for shipments—they can be complex to maintain.

"In our experience, shippers who rely solely on their TMS to manage freight bill audits operate at a disadvantage," says John N. Mecchella, Esq., president of Congers, N.Y.-based Technical Traffic. "When they only use a TMS audit to directly pay carriers, either internally or by outsourcing to third parties, they lose the advantages they would have acquired if carriers had been obligated to submit invoices based on contractual rate agreements."

Not only are the checks and balances that exist—by having independent pre-audits performed against carrier-rated freight bills—lost, but the TMS audit function must also be supported with a carrier settlement process to reconcile any differences.

In addition, within many companies, TMS does not support all shipping activities, as logistics data can be fragmented at times and data consolidation is typically difficult to support.

The solution? Shippers should consider hiring FBAP firms to help alleviate the burden of managing this data.

"By coupling an existing TMS with an outsourcer that submits freight bills, shippers dramatically reduce administrative TMS expenses, and virtually eliminate and overpayments to carriers," Mecchella says. "In addition, the accounts payable process is enhanced by the handling of freight payments, as well as the full reconciliation of carrier payment issues."

The integration of shippers' pre-existing TMS and ERP systems with FBAP firms' services provides holistic views of transportation activities, as shippers also maintain accurate audits of their freight expenses.

"This integration also provides shippers cost allocations to item levels and highly accurate, independent freight accruals, among other benefits," Mecchella adds.

"Third-party providers offer a much greater volume of data," Snavely says. "First, providers' web-based analytical tools streamline and help customers save money on their supply chains. Second, third parties perform their services on a global scale so that shippers can expand their operations without worrying about the payment of invoices, foreign currencies, or language differences."

For effective supply chain management, shippers will be looking to increase their visibility into global transportation spend as they continue to expand throughout the world. And the single best source for gaining this visibility, according to Zygmunt and Miner, is a robust, best-practice, global FBAP provider that has a presence in the core geographic regions where the shippers operate.

"As businesses execute strategies that entail expansion in regions such as Latin America, nearshoring in Mexico, or even moving production back to the United States, there will be considerable supply chain impacts," Erickson says. "Therefore, shippers are looking for third-party providers to partner with them as their strategies shift, understand their business operations, and work alongside them as they implement any necessary changes."

Aside from having full-service, worldwide facilities to process, audit, and remit payment on a global scale, shippers are interested in receiving a single, global data warehouse of their transportation activity.

"This global data warehouse helps shippers easily review their financial figures, while also decreasing their costs of conducting business—two of the underlying reasons why shippers look to outsource in the first place," Snavely explains.

CONSTANT EVOLUTION

Shippers are constantly evolving, whether they are moving into new markets, acquiring new companies, or adding parcel, carrier services, imports, or exports. And FBAP firms should react accordingly.

"FBAP firms should be responsive and collaborative, as they work alongside shippers to make this evolution as seamless as possible," Erickson says.

This evolution began around 2007, as the global economic recession forced shippers to add further services at lower costs, according to Hazen.

"As shippers were poised to do more with less, they began to realize they wanted a single provider to perform their functions on a global scale," Snavely says.

Information, and the ways in which it is provided to shippers, has also evolved throughout the past decade, as shippers have moved from the need for static reports to online reports, ad-hoc queries, dashboards, and business intelligence.

"This point in the evolution focuses heavily on analytics, giving shippers the ability to better predict changes to their supply chain, along with any costs that are associated with those changes," Erickson explains.

This constant evolution in shippers' markets and services, as well as information as a whole, reiterates Snavely's focus on global data warehouses.


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"Even though shippers' average audit savings in North America vary between five and nine percent of their annual transportation expenditures, they are more interested in finding firms that perform FBAP services worldwide — and provide analytical tools to help them manage their global supply chains," he says.

Vaillancourt believes that pricing pressures from carriers have influenced the evolution as well. "Shippers have to find a way to contain costs, while also providing a positive customer experience," he says. "Consequently, the FBAP industry is beginning to be viewed more as a strategic service rather than a tactical settlement service."

As strategic service providers, FBAP firms also use technology to further automate the audit and payment process.

"This evolution includes data inputs and outputs, as well as the payment process, leading to an increase in business intelligence services such as reporting and benchmarking tools," Zygmunt says. "And, as shippers' interest in controlling global supply chain expenses continues to rise, the FBAP firms' service offerings will only continue to increase as well, so that customer needs are met throughout the world."

SIGNIFICANT SAVINGS

Unlike some industries, the 2007 global economic recession has, for the most part, had positive implications for FBAP firms providing outsourced services. And there are no signs that these effects on outsourcing will subside in the near future.

"Keeping the economy in mind, shippers will continue to outsource various functions," Snavely says. "Freight and auditing is a natural service to outsource as shippers look to further decrease their internal costs and realize long-term savings."

Along with a reduction in costs, outsourcing also provides suppliers more time to focus on their core business activities, so that they no longer have to manage processes such as invoicing.

"FBAP firms offer technology and services that create value — by allowing shippers to concentrate only on their core businesses," Snavely adds. "Through the use of an FBAP firm's products and services, shippers realize significant savings, even as their respective industries continue to evolve." ■

DRILL DOWN TO DATA

While freight payment data unlocks key insights into operations, many FBAP companies fine-tune their services to allow for shippers to drill down even further. In response to customer feedback and requests, they continually develop new types of services, improve reporting capabilities, and add more revealing key performance indicators (KPIs). In fact, they customize projects for one customer and often offer that package to others for maximum benefit.

For example, Austin, Texas-based logistics IT service provider Fortigo receives frequent customer requests to conduct closed-loop audit services—cross-referencing freight data elements with corresponding information from their sourcing, visibility, or manifesting systems. While a freight invoice may seem accurate, cross-referencing can reveal discrepancies—for example, a service the shipper requested may be different from the service the carrier actually provided, calling for a chargeback.

Real-time reporting also tops the list of customer requests. This allows shippers to view KPIs online and drill down for more granular data, rather than waiting for periodic reports, notes George Kontoravdis, president of Fortigo.

Another common request is route optimization based on historical shipping data, which shippers can also use to improve the routing guides they issue to suppliers. "The freight audit process uncovers numerous findings shippers can funnel into their decision-making," notes Kontoravdis.

"As a result, some freight payment companies provide a web portal for carriers to enter their invoices," says Kontoravdis. "But carriers don't like the double data entry, or potential for errors.

We developed a tool that enables carriers without EDI capability to export data from their accounting system, which streamlines processes and reduces errors and costs," he adds.

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

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

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

THOUGHT LEADERS

Opening a Dialogue on Freight Payment

Q: A recent report revealed that only 18 percent of shippers discuss best practices in freight payment processing with outside organizations. Were you surprised by that number?

A: As a company that works hard to help our clients think strategically—and views payments as a strategic function of any company—we'd love to hear that shippers are making freight payment processing a primary topic of discussion internally and among peers. I'm not surprised to hear the statistic, though, and I think the reason for the silence is that shippers just don't know what questions to ask.

Q: What questions should they be asking?

A: The most important question is about how freight payment organizations are handling your freight funds. Many vendors use a float model, which means they take in shippers' money, co-mingle it with other funds for interest and investments, hold funds for a few days, and then they pay carriers. The problem can arise during that middle step when freight funds could be used for risky investments or outright fraud. As we saw back in 2013 with a few providers that went bankrupt, if the money disappears before payments are made to carriers, shippers are out money, yet their carriers still expect to get paid.

Q: If float has intrinsic risks, what's the alternative?

A: The alternative is a trade finance model, which is what U.S. Bank Freight Payment uses. Because we're a bank, we're held to higher standards and our freight payment process never holds freight funds to earn money from "float." With a trade finance model, a payment-processing organization ensures that carriers get paid. In fact, we actually pay carriers before taking shippers' money, so there's no risk of your money disappearing before an invoice is paid. It's important to ask how your funds are being handled and measure the time between the payment to your provider and the payment to your carrier. As a customer, you should have ongoing visibility, so you can be confident your funds are being managed in a way that ensures they're safe throughout the process.

Q: What additional questions should shippers be asking?

A: Shippers should also ask about audit and automation. Is your provider delivering a 100-percent audit on every invoice? Are duplicate invoices from carriers counted as "savings"? Take a realistic look at how your provider audits your invoices and manages your carrier contracts to make sure you are not leaving potential audit savings on the table. On average, U.S. Bank Freight Payment customers save 2-4 percent on monthly transportation costs. This is not including so-called "savings" from duplicate invoices.

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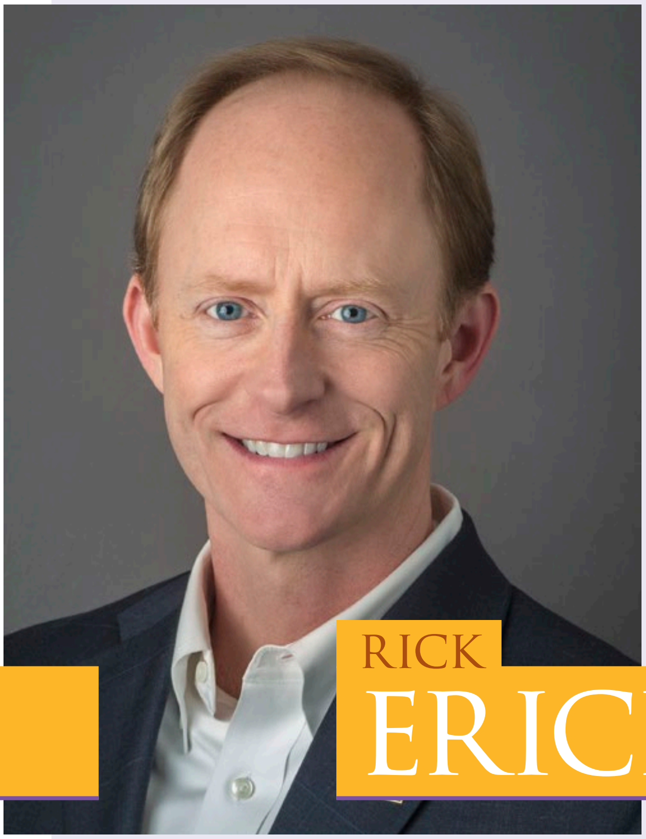

RICK ERICKSON
Global Director of
Freight Payment Solutions
U.S. Bank

Temporary Bills and Lack of Investment Threaten U.S. Infrastructure

TOM
HEINE
CEO
Aljex Software

Q: The House just passed a three-month highway bill. Will that impact infrastructure investment?

A: On July 28, 2015, the House voted to approve a temporary $8-billion bill extending federal transportation funding until the end of October. They sent it to the Senate only two days before the nation's road and transit spending would have expired.

Congress has been playing a deadly game of chicken with our roads and bridges. We limp from one temporary transportation bill to another. Partisanship has seemingly ended responsible government. Transport requires long-term planning and investment, not three-month bills.

The U.S. Federal Highway Administration has rated nearly 200,000 bridges—one of every three bridges in the United States—as structurally deficient or functionally obsolete. And more than one-fourth of all bridges are more than 50 years old, the average design-life of a bridge. These are bridges that we depend on for a living, and that our families drive on every day. We have all our eggs in one basket, and the basket is falling apart.

Some places still need new roads to ease congestion. Southern California has shown us that adding new lanes and roads doesn't always solve the problem. But in many places, an extra lane or two will make a huge impact, reducing bottlenecks. Smoothly flowing highways are also safer, more fuel-efficient, and lower polluting.

Q: What about U.S. rail infrastructure?

A: Like our highway system, some rail infrastructure is just fine. Other parts are even worse off. Consider this: A 105-year-old swinging railroad bridge in New Jersey serves 750,000 people each day on 2,000 intercity and commuter trains. It connects in one direction to a 105-year-old badly decaying tunnel under the Hudson River. If the tunnel or bridge goes, the Northeast Corridor rail system from Washington to Boston is out of service, and 550,000 commuters have to find another way to enter New York City. What would be the financial impact to the U.S. economy if that happened? If you add all those commuters to the already overcrowded roads, how will the trucks get around?

Q: Is one alternative to reduce traffic loads?

A: Sometimes those methods don't make sense financially unless you look at the bigger picture. Yes, Amtrak loses money each year, but it benefits us overall. It takes pressure off our already-over-capacity road system. If there is a major road or bridge failure, it's crucial to have redundancy and extra capacity.

Is it time to give up a few aircraft carriers? What is more of a threat: militants with machine guns on pickup trucks on the other side of the world, or being on our decrepit U.S. roads where 2.5 million people are injured, and 30,000 die annually? I am not saying militants and rogue nations aren't a threat, but could we be spending our money more wisely? It's at least worth discussing.

Our nation also needs to invest in other infrastructure, schools, sewers, high-speed Internet, and electric transmission capability. Our current air traffic control computer system is antiquated. We have structurally deficient dams, and thousands of superfund sites. People involved in transportation should let their voices be heard about the need for maintaining and improving infrastructure. Without adequate investment in roads and bridges, we are costing ourselves much more in the long run with inferior results. The time to start is now. In November, vote for someone who will vote for our infrastructure and for transportation.

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Leveraged Platforms: The More Efficient Road Ahead

Q: What is a leveraged platform?

A: A logistics services provider leverages its platform to employ the same best practices to manage its own supply chain needs as it does for its own client base of direct shippers. By augmenting their global scale with a vast network of local stations, these service providers are better able to develop a thorough, real-time understanding of their clients' latest shipping needs and patterns.

Q: What are the benefits of participating in a leveraged platform?

A: Core carriers participating in leveraged platforms typically receive consistent, attractive internal freight volumes and specific lanes of business. Locally-based stations also give less-than-truckload (LTL) carriers highly accurate classification, reducing rebilling that may occur with 3PLs and their central call centers. In addition, co-loading large LTL shipments within dedicated networks can alleviate shipment and capacity issues—a current major challenge that will linger well into 2016.

Q: How does technology play into all of this?

A: Today's web-based tools help carriers and shippers dive deep into distribution operations information, precisely tracking shipments, delivery metrics and other trends in real-time that greatly impact project outcomes. Sharing this data helps carriers spot-rate larger shipments to fit backhaul needs, while also helping shippers save through mode optimization and usage of co-load products or truckload (TL) partial when larger LTL shipments may be more expensive.

Q: Can leveraged platforms help carriers streamline their processes?

A: Yes. Through a combination of integrated distribution services and extensive global carrier networks, leveraged platforms help streamline shipping processes, optimizing virtually every aspect of domestic and international distribution, including scheduling, tracking and pricing.

Q: How can the goals of carriers and 3PLs be aligned?

A: Our 24/7/365 on-demand world means that client needs and lane volumes are continually evolving, requiring constant communication between all parties to keep things running smoothly. Drivers—and the capacity they deliver—can often be retained by finding return loads or by simply asking booking preferences after completing initial TL shipments. In one case, a core vendor expressed needed capacity for inbound freight into California. With a small and simple pricing adjustment, the carrier participating in a leveraged platform delivered twice the critical volume for the core vendor. This kind of solutions-oriented thinking will drive tomorrow's success stories.

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CHUCK FATTORE
President
RR Donnelley Logistics

Outsourcing to a Third-Party Logistics Provider

Q: From a shipping perspective, how can manufacturers best address today's increasing regulations and demand volatility?

A: Outsource your shipping to a third-party logistics (3PL) provider. The answer might sound a bit self-serving, but I believe most manufacturers would agree if they took the time to crunch the numbers. A 3PL is much more familiar in dealing with the complex transportation regulations of the federal government, as well as among different states. The same goes with handling the peaks and valleys of customer shipment demands—3PLs have much more capacity with a network of carriers to deal with fluctuations in shipping needs. By leaving all these headaches to a 3PL, manufacturers can better focus on what they do best.

Q: But what about the cost of outsourcing shipping?

A: In most cases, a 3PL should be able to reduce transportation costs by at least 5 percent, and as much as 25 percent, for manufacturers who have been running their own shipping departments. In addition to the efficiencies that a 3PL provides, the manufacturer is able to eliminate costs such as payroll, taxes and workers' comp insurance. You also are reducing risk for the manufacturer, because the 3PL will even cover the cargo insurance for shipments.

Q: How can manufacturers best decide whether outsourcing their shipping needs will benefit their operation?

A: Typically, the deciding factor is the amount of your overall freight spend. Shippers of any size can outsource their freight on a spot basis and justify these types of expenditures. However, when it comes to freight management (bidding, procurement, carrier realignment, order consolidation and optimization, and load execution), manufacturing companies typically should consider hiring a logistics firm if their freight spend exceeds at least $3 million. In weighing the decision, you should also look at other cost savings besides reducing staff. For example, if you are a food company, you may benefit from using a 3PL to store product in refrigerated trailers versus renting from or owning a freezer facility for fluctuating storage needs. Or if a manufacturer is running its own private fleet, a 3PL can take over its operation—eliminating risk and expenses related to safety issues, reducing equipment costs, and getting rid of all the headaches of keeping up with DOT regulations. For shippers utilizing dedicated lanes, a 3PL that is asset-based can provide even greater cost savings.

Q: What if the manufacturer still wants control?

A: You don't have to give up control. Most 3PLs today provide the technology that allows you to keep a close watch over your shipments. But if you are still concerned about eliminating your shipping department, you can simply contract with a 3PL on a temporary basis during seasonal peaks. Many postal delivery companies, for example, contract with a 3PL during the holiday season to avoid ramping up with temporary drivers.

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[WMS]

BUYER'S GUIDE 2015

Organize materials movement? Optimize inventory control? Check, check, and double check. These top-of-the-line warehouse management systems provide visibility, flexibility, and more.

WMS BUYER'S GUIDE 2015

	COMPANY	PRODUCT	DESCRIPTION
C	**3PL Central** Manhattan Beach, CA 3plcentral.com 888-375-2368	**3PL Warehouse Manager WMS**	Helps 3PL providers manage multiple customers, integrate with EDI and e-commerce platforms, and provide real-time inventory information 24-7 worldwide.
L	**Argos Software** Fresno, CA argosoftware.com 559-227-1000	**Abecas Insight**	Integrates with accounting, payroll, personnel, maintenance, freight management, and sales management modules. Capabilities include resource and location tracking, perpetual inventory, reporting, EDI.
L C	**ASC Software** Dayton, OH ASCsoftware.com 937-429-1428	**ASCTrac WMS**	Enables end-to-end inventory tracking using real-time RF directed workflows, user-defined views/reports, extensive configurable customer/item rules, and FDA-style lot traceability of manufactured goods.
L C	**Automation Associates** Mississauga, Ontario rfpathways.com 905-565-6560	**RF Pathways WMS**	Automates and optimizes all warehouse processes for receiving, crossdocking, putaway, inventory management, picking, staging, and shipping. Features a robust 3PL billing engine and Web access.
H L	**Cadre Technologies** Denver, CO cadretech.com 866-252-2373	**Cadence WMS**	Fully featured, real-time warehouse management system that manages complex and high-volume warehouses and fulfillment centers for logistics companies, distributors, and manufacturers.
H L	**Camelot 3PL Software** Charlotte, NC 3plsoftware.com 866-3PL-SOFT	**3PLink**	Provides 3PLs with robust operational technology to satisfy multi-tenant inventory management, service billing, EDI, wireless scanning, Web visibility, reporting, and document and freight management.
H	**Daifuku Webb** Farmington Hills, MI daifukuwebb.com 248-553-1000	**eWareNavi**	Directs equipment and multiple workers simultaneously; provides warehouse inventory control, flexibility, and visibility. Effective for conventional warehouses, and partially or fully automated distribution facilities.
L	**Dassault Systèmes** Long Beach, CA apriso.com 562-951-8000	**Apriso Warehouse**	Directs people, processes, and equipment by monitoring and reporting all activities from receipt of raw materials through shipment of finished goods.
H L C	**Datex** Clearwater, FL datexcorp.com 800-933-2839	**Datex FootPrint WMS**	Configurable workflow-based system supports omni-channel and multi-channel order fulfillment; customizable reporting; EDI and integration ready. Optional cartonization, manufacturing, procurement & shipping modules. Ideal for 3PLs.
H	**Deposco** Alpharetta, GA deposco.com 877-770-1110	**Bright Warehouse**	Receives orders using WiFi-enabled handheld devices, and validates receipts against purchase orders or advance shipping notices. Manages directed putaway and picking. Provides tools required to build and manage shipments.

H Hosted on the vendor's site L Licensed to the user C Cloud based

	COMPANY	PRODUCT	DESCRIPTION
H L	**Epicor** Austin, TX epicor.com 800-999-1809	**Epicor Warehouse Management System**	Offers end-to-end supply chain management capabilities, including customer relationship and financial management, business intelligence, and integrated shipping.
H L C	**Foxfire** Greenville, SC foxfiresoftware.com 864-868-5243	**Warehouse Management Software solutions**	Foxfire specializes in warehouse management software services. The software is available as Foxfire WMS Enterprise, providing flexibility to use the system configured to exact specifications.
L	**HAL Systems** Newnan, GA halsystems.com 770-927-0700	**HAL WMS**	Identifies and locates products; interfaces with inventory control systems; manages radio frequency terminals, scanners, and barcode printers.
L C	**HighJump** Minneapolis, MN highjump.com 800-328-3271	**HighJump Warehouse Management**	Complete warehouse capabilities for manufacturers, distributors, retailers and 3PL providers. Configuration and adaptability tools accommodate any workflow. Compliance with EDI and transportation requirements.
L	**IBM** Arnonk, NY ibm.com 877-426-3774	**Sterling WMS**	Provides complete control and visibility from product receipt through fulfillment; exception-based management; and capabilities for managing value-added service requirements.
L	**Infor** New York, NY infor.com 800-260-2640	**Warehouse Management 2000**	Automates and accelerates receiving, crossdocking, picking, shipping, slotting, and voice-directed work. Provides inventory, yard, labor, and event management.
L	**Infosite Technologies** Boisbriand, Quebec infositetech.com 888-395-0354	**DM Warehouse**	Supports full rework, repack, restack, movement, putaway, product transfer, and other warehouse operations.
H L C	**Intelligrated Software** Mason, OH intelligratedsoftware.com 866-936-7300	**Warehouse Execution System**	Scalable suite of warehouse software with efficient data sharing integrates seamlessly with automated equipment, and voice and light picking and putting technologies.
L	**IntelliTrack** Sparks, MD intellitrack.net 888-583-3008	**IntelliTrack WMS**	Controls cycle counting, kitting, replenishment, space management, and other warehouse operations functions; integrates with wireless technology.
H L C	**Interlink Technologies** Perrysburg, OH thinkinterlink.com 419-893-9011	**Warehouse-LINK**	WMS solutions that support all distribution activities in any warehouse environment with Web-based access and real-time inventory information for improved space utilization, productivity, and accuracy.

WMS BUYER'S GUIDE 2015

	COMPANY	PRODUCT	DESCRIPTION
H L C	**Int'l. Business Systems** Folsom, CA ibs.net 916-542-2820	**IBS Dynaman WMS**	Modules for inbound, storage, outbound and value-added services. Ideal for high-volume, time-critical, complex logistics environments. Advanced functions: crossdocking, inline VAL, kitting, JIT, sequencing, reverse logistics, and assembly.
H	**International Data Systems** Chula Vista, CA internationaldatasystems.com 877-254-4858	**Velocity WMS**	Manages receiving, putaway, inventory, order fulfillment, and shipping in real time. Features include user-defined fields, reporting services, charges/calculation billing, EDI integration, mobile computing, and barcode scanning capabilities.
L	**Invata Intralogistics** Conshohocken, PA invata.com 860-819-3200	**Warehouse Automation**	Features a fully integrated platform of four software modules and shared, high-performance database for optimizing warehouse management and warehouse control processes.
L	**IQMS** Paso Robles, CA iqms.com 866-367-3772	**Enterprise IQ WMS**	Controls and tracks all incoming and outgoing inventory movements with ERP and EDI integration, directed picking and putaway, work-order staging, wave planning, palletizing, and shipment planning.
L	**JDA Software** Scottsdale, AZ jda.com 480-308-3000	**JDA Warehouse Management**	Optimizes the movement of inventory – from raw materials to finished goods – and manages materials handling equipment and labor.
H	**Kewill** Chelmsford, MA kewill.com 978-482-2500	**Kewill MOVE**	Manages dock and yard operations, crossdocking, pick and pack, cycle counting, and automatic replenishment.
L	**Knapp** Kennesaw, GA knapp.com 678-388-2880	**KiSoft WMS**	KiSoft WMS is for conventional paperless systems and automated warehouses, with best-practice processes in the warehouse, more than 1,700 standard features, and short implementation times.
L	**LOG-NET** Red Bank, NJ log-net.com 732-758-6800	**LOG-NET Shipment and Warehouse Management**	Provides operational functionality to plan, receive, process, and invoice warehouse activities. Facilitates warehouse bookings, receiving, transfers, load plans, and manifests; offers global inventory visibility; and processes over, short, and damage exceptions.
C	**LogFire** Atlanta, GA logfire.com 678-261-9000	**LogFire Cloud Warehouse Management**	LogFire delivers a digital fulfillment network that helps organizations leverage the cloud to cost-effectively modernize their supply chain, boost fill rates, and rise above competitors.
L C	**Logimax** Jacksonville, FL e-logimax.com 855-253-8855	**WMS Foundation**	A browser-based system that contains multi-customer and inventory control functionality, integrated RF, third-party billing, report writing, and customer Web self-service.

H Hosted on the vendor's site L Licensed to the user C Cloud based

	COMPANY	PRODUCT	DESCRIPTION
H L C	**MADE4NET** Hackensack, NJ made4net.us 201-645-4345	**WarehouseExpert**	Powerful and robust WMS solution, with a strong 3PL engine, as well as a user configurable user interface and business rule engine.
L C	**Magaya** Miami, FL magaya.com 786-845-9150	**Magaya WMS**	Controls cargo transfer, receipt, and storage. Integrates with accounting. Use with barcodes to increase speed and accuracy. Replenishes inventory and sets sequences. Provides real-time inventory view.
L C	**Manhattan Associates** Atlanta, GA manh.com 770-995-7070	**Supply Chain Commerce**	Manhattan Associates makes commerce-ready supply chains that bring all points of commerce together so companies are ready to sell and ready to execute.
L	**Mincron Software** Houston, TX mincron.com 800-299-7010	**StockSmart**	Manages receiving, putaway, intelligent picking, packing, shipping, optimized product movement strategies, slotting, virtual locations, crossdocking, cubing and dimensioning, and dynamic workload prioritization.
H	**Next View Software** Orange, CA nextviewsoftware.com 714-288-0363	**Next View WMS**	Optimizes inventory, space, and labor across the supply chain. Provides complete visibility of raw materials, work in process, and finished goods across manufacturing, distribution, retail, and 3PL facilities.
H L	**NTE** Oakbrook Terrace, IL nte.com 888-607-9372	**NTE Warehouse Management**	Supports dock management, order selection, and kitting with integrated barcode scanning, RFID, and Android and iPhone capabilities. Local/global support for healthcare, medical, construction, food, high-tech, and third-party logistics/warehousing applications.
H L	**Oracle** Redwood Shores, CA oracle.com 800-392-2999	**Oracle WMS**	Provides complete warehouse management capabilities including advanced wave planning, crossdocking, and demand-driven replenishment. Can be implemented with Oracle E-Business suite or standalone.
H L	**PathGuide Technologies** Bothell, WA pathguide.com 888-627-9797	**Latitude WMS**	A comprehensive software suite that automates warehouse inventory transactions in real-time including: receiving, zone picking, slotting, cycle count planning, truck route shipping, and manifesting.
L	**proVision WMS** Toronto, Ontario provisionwms.com 800-263-4258	**proVision WMS Warehouse Management Software**	Automates small/medium-sized warehouses, improving operational efficiencies and inventory accuracy. Optional 3PL and pick/pack/ship modules. Supports RF/barcode/voice technologies and optimizes receiving, putaway, picking, staging, and shipping processes.
H L	**QSSI** Somerset, NJ qssi-wms.com 732-805-0400	**PowerHouse WMS**	Improves inventory accuracy and customer service levels; reduces order processing time, and putaway and picking errors; enhances labor and warehouse resources; and reduces inventory carrying costs and physical inventories.

WMS BUYER'S GUIDE 2015

	COMPANY	PRODUCT	DESCRIPTION
H L	**Ramp Systems** Philadelphia, PA rampsystems.com 215-854-6325	**Ramp Enterprise WMS**	Provides comprehensive warehouse management capabilities including EDI integration, bar-code scanning, inventory and order management, and customized reporting.
H	**Reddwerks** Austin, TX reddwerks.com 512-597-6810	**Warehouse Execution Software**	Facilitates warehouse functions including stocking, packing, palletizing, receiving, wave planning, putaway, and replenishment.
L	**Retalix** Duluth, GA retalix.com 800-225-5627	**Retalix WMS**	Manages route-based, multi-stop distribution operations with tools and features designed to enhance efficiency and improve customer service.
H L	**Robocom** Farmingdale, NY robocom.com 631-753-2180	**R-WMS**	Offers RF, voice, and paper processing options, plus functionality that enables distributors and 3PLs to manage all aspects of their warehouse operations.
H L	**Royal 4 Systems** Long Beach, CA royal4.com 562-420-9594	**WISE**	Controls inbound, value-added services; outbound, automated storage, and retrieval systems integration; and sequencing for just-in-time deliveries. Includes tools for load planning, delivery scheduling, and EDI advance ship notice confirmation.
L	**Sage Software** Irvine, CA sage.com 866-996-7243	**Sage ERP X3**	Manages all inbound, outbound, and intra-site stock movements. Integrates receipts, shipments, inter-site transfers, and returns with sales and purchasing data.
H L	**SAP** Newton Square, PA sap.com 800-872-1727	**SAP Extended Warehouse Management**	Features analytical tools that enable efficient operations management; supports the integration of multiple technologies – including voice and data capture – as well as control of automated materials handling equipment from a single system.
H L	**Softeon** Reston, VA softeon.com 855-SOFTEON	**Softeon WMS**	Manages warehouse receiving through shipping, including assembly/kitting and reverse logistics. Orders are sourced through distributed order management and integrated with demand planning. Rules engine enables real-time changes to business rules.
H L	**Sologlobe** Montreal, Quebec sologlobe.com 514-938-4562	**SOLOCHAIN**	Supplies end-to-end inventory tracing and visibility. Includes order management, inbound execution, advanced picking and shipping functions, voice recognition technology, yard and dock management, 3PL advanced billing, manufacturing execution, and dynamic slotting.
H	**SphereWMS** Littleton, CO SphereWMS.com 214-382-2680	**SphereWMS**	Manages receiving, inventory, kitting, and omni-channel fulfillment. Includes RF scanning. Provides powerful user-control ad hoc reporting. Fully integrates with ERP systems, retailers, and shopping carts.

H Hosted on the vendor's site L Licensed to the user C Cloud based

	COMPANY	PRODUCT	DESCRIPTION
C	**Suntek Systems** Irvine, CA suntekscm.com 949-789-0070	**iFULLFILL**	Provides streamlined process from fulfill order entry to shipping, and allows customer to view the inventory status at any time, anywhere.
H L	**Supply Vision** Chicago, IL supply-vision.com 847-388-0065	**Supply Vision WMS**	Automates 3PL and small to mid-sized manufacturer warehousing and distribution activities. Optimizes receiving, putaway, and picking processes with integrated shipping solutions.
H L	**Synergy North America** Charleston, SC snapfulfil.com 843-577-5007	**Snapfulfil SaaS WMS**	A Tier 1 WMS that can be implemented within 45 days. Typically delivers efficiency improvements of up to 30 percent. Facilitates receiving, putaway, replenishment and picking. Provides audit and inventory control, data integration, and dispatch management.
L	**TAKE Supply Chain** Austin, TX takesupplychain.com 800-324-5143	**GeminiSeries**	Integrates with existing Oracle ERPs to provide solutions for receiving, manufacturing, shipping, quality, labeling, and real-time inventory data, giving complete visibility to supply chain functions.
L C	**TECSYS** New York, NY tecsys.com 800-922-8649	**EliteSeries**	Optimizes warehouse execution processes, improves performance and profitability. User-friendly visual applications with real-time visibility and analytics. Scalable, adaptable, and extendable to business needs.
H	**TransGroup Worldwide** Seattle, WA transgroup.com 800-444-0294	**TransWarehouse**	Manages multiple warehouses and SKUs. Generates orders and pick lists, and tracks inbound, on-hand, and outbound inventory.
L	**W&H Systems** Carlstadt, NJ whsystems.com 201-635-3493	**W&H Shiraz Warehouse Control System**	Directs real-time activities within warehouses, providing immediate feedback to management for monitoring and quick decision-making on all processes.
L	**Westfalia Technologies** York, PA savanna.net 800-673-2522	**Savanna.NET®**	Directs, controls, and optimizes internal material flow and order picking as a system-wide solution. A modular WMS-WCS integrated solution that eliminates separate applications.
H	**WITRON** Arlington Heights, IL witron.com 847-385-6000	**WITRON WMS**	Allows distribution centers to automatically pick cases, build pallets of mixed SKUs, and stretch wrap and ship orders. Multi-language support for user interfaces allows the same platform to be used internationally.
H L	**Zethcon** Lombard, IL zethcon.com 847-318-0800	**Synapse**	Processes multiple warehouses and multiple customers with different processing requirements, using the same database and software.

SSG William R. Wilson III – Drawing by Michael Biondo

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Nourishing a Healthy Supply Chain

A 3PL partnership helps nutritional life sciences company Nutrabolt stay lean and fiscally fit.

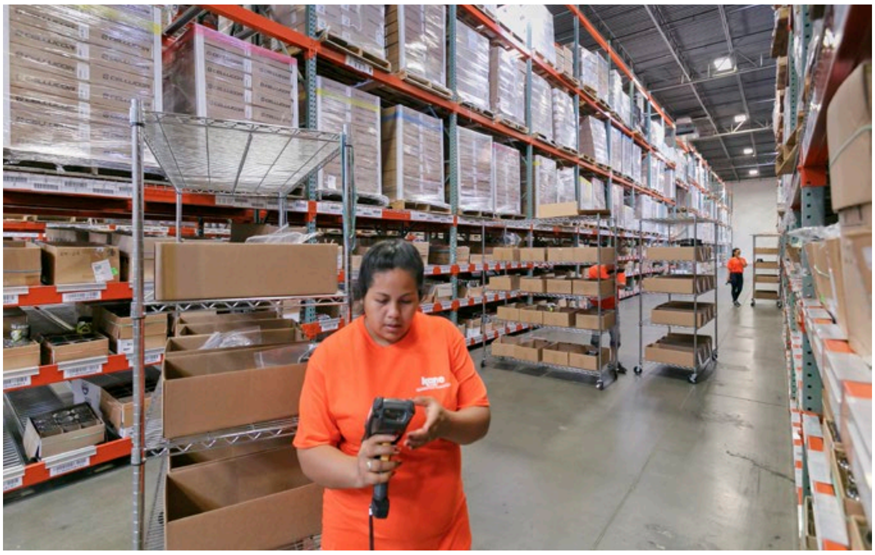
Rapid growth drove sports nutrition company Nutrabolt to set new logistics goals, and enlist the services of a "personal trainer"—Scranton, Pa.-based third-party logistics (3PL) company Kane is Able (KANE).

Founded in 2002, Nutrabolt offers sports nutrition, weight loss, and general health and wellness supplements through brands such as Cellucor, Neon Sport, Royal Sport LTD, and Cavalier. In addition to serving distributors and major retailers, the Bryan, Texas-based company sells its products to individual consumers ordering online from distributors, retail websites, or directly from Nutrabolt.

In 2014, Nutrabolt was named to the *Inc. 5000* list of the fastest-growing private companies in the United States. This level of fast growth is a testament to its products and business model, but also created many logistics challenges. To meet growing customer demand, Nutrabolt needed to process orders more quickly and efficiently. Its strategy also had to include the flexibility to absorb dramatic swings in order volumes to support promotional campaigns. Nutrabolt provides omni-channel fulfillment; it processes orders for pallets, packages, and single-item units of sale through the same warehouse. Its products require strict temperature control, and any variation could result in inventory loss.

Nutrabolt viewed these logistics challenges as an opportunity to evaluate all aspects of its operation. The company looked at its fixed assets—including the number and location of warehouses—as well as staffing within those facilities. It also analyzed the processes and technology that would maximize the utilization of these brick-and-mortar investments to support current and future business levels.

Once Nutrabolt established its goals,



Nutrabolt outsources its warehouse management functions to KANE, which provides temperature-controlled warehouse space, and manages expiration dates and first-in, first-out stock rotation of its nutritional supplements.

it decided to enlist KANE's third-party services. Many factors drove the decision to outsource warehouse management, including a strategy of focusing on core competencies, while leveraging the expertise of a 3PL that specializes in serving the retail sector. KANE operates eight million square feet of distribution space, with 25 facilities across the United States, providing logistics solutions to consumer goods manufacturers. The 3PL operates both dedicated (single-client) and shared (multiple-client) distribution centers.

"Given our rapid growth, operating our own warehouses required that we invest significant capital in both human resources and new warehousing and logistics technology systems," says Justin Woodall, vice president of logistics for Nutrabolt. "Our approach was to analyze the capabilities of our existing infrastructure, make appropriate decisions to support our business, and then enlist the knowledge and skills of a third-party provider."

Among the decisions that Nutrabolt made prior to selecting a third-party supplier was to consolidate its warehouse network. Rather than operating five warehouses in less-than-ideal locations, Nutrabolt established distribution centers in two strategic locations — Atlanta

Among the benefits of Nutrabolt's 3PL partnership are accurate inventory control and shipment visibility of its Cellucor supplements.

and Salt Lake City. These facilities place Nutrabolt closer to manufacturers and end consumers. As a result of the new DC locations, the company expects to see a 30-percent reduction in miles traveled for full-truckload shipments, and a reduction in cost and transit times for less-than-truckload shipments.

After making these decisions, Nutrabolt began to look at proposed solutions that would maximize its assets. The process began when Nutrabolt engaged Wexford, Pa.-based consulting firm Greve-Davis to assist in the search process, and identify the best provider to meet the company's needs. Ultimately, Nutrabolt chose to partner with KANE on this major transformation project and ongoing management services.

"In the past, we worked with 3PLs on a tactical and transactional basis," says Woodall. "With KANE, however, the cultural fit was more important."

"In today's marketplace, shippers expect a high level of 'blocking and tackling' from their 3PLs; that's a given," agrees Ken Joseph, KANE's director of business development. "But KANE brings the added value of a customer-first focus."

KANE and Nutrabolt also agreed on a process-driven approach to developing customized solutions. In fact, both companies are proponents of Six Sigma, a disciplined, data-driven approach and methodology for eliminating defects (driving toward six standard deviations between the mean and the nearest specification limit) in any process — from manufacturing to transactional, and from product to service.

A Shared Approach

Once Nutrabolt selected KANE, the two companies embarked on a thorough review of data and existing warehouse systems, as well as projected future needs. "KANE employs a structured and detailed approach to onboarding new customers," says Joseph. "We analyze and document business requirements, and translate them into an efficient operating process and corresponding warehouse management system (WMS) configuration. We are methodical and not afraid to put on the brakes when we have to."

This shared approach and philosophy is one key success factor in the solution that is now in place. Woodall recommends that all logistics leaders allow adequate time for supplier selection, process design, and implementation of their selected strategy. "Don't sacrifice accuracy for speed," he advises.

The initial integration and validation took place in March 2015, and KANE began managing Nutrabolt's Atlanta and Salt Lake City warehouses shortly thereafter. In just a few months, Nutrabolt has achieved positive results from its partnership with KANE. Inventory availability has improved, and the time required for products to reach the end user has been trimmed, according to Woodall. The average time from order receipt to shipment has decreased from three days to 24 hours. The new distribution center locations have also reduced days in transit for small-package shipments. End customers now receive goods faster, a key factor in consumer purchasing decisions.

"Previously, we reached 22.6 percent of the population in two days or less, and 64.2 percent in three days or less," says Woodall. "Now, those numbers have improved to 66.5 percent of the population in two days or less, and 96.2 percent in three days or less."

While still early in the process, Nutrabolt has already experienced improved efficiency. In the past, one of Nutrabolt's prior warehouse locations set a record of picking, packing, and shipping 740 orders in one shift. In the first week under KANE's management, the Atlanta DC came close to that record, with 680 orders picked, packed, and shipped in one shift.

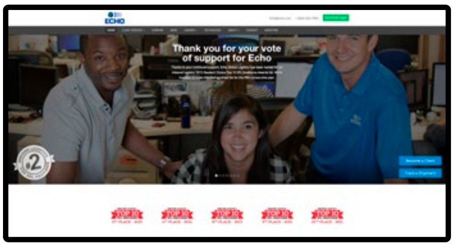
Both companies are committed to ongoing success and to operating in a structured way, with two scheduled conference calls per week to ensure goals align and to measure the effectiveness of warehouse functions. Other operational interactions, including business reviews and attention to key performance indicators, occur routinely.

Just as KANE and Nutrabolt are in continuous communication, so are their respective technologies. As part of the systems implementation, some operational functions that were once handled manually have now become automated, reducing the time and resources needed to complete these routine tasks, while also improving the accuracy of information flowing seamlessly through KANE's WMS and Nutrabolt's existing systems.

For example, in the past, Nutrabolt did not provide a direct link between its carriers and 3PLs. Orders were received in Nutrabolt's enterprise resource planning (ERP) system, then manually communicated to 3PLs in the various systems they used. For direct-to-consumer shipments, Nutrabolt used its ERP system's basic warehousing function. Today, once Nutrabolt receives an order, it determines where the shipment will originate based on each location's inventory, forecasts, and production schedule. Then, it transmits order information directly to carrier partners. This change effectively removed seven hours of labor per day.

Automation is just one of many areas where Nutrabolt and KANE are identifying opportunities for greater efficiency and improved service to end users. And, like the many fitness enthusiasts who use Nutrabolt's products, the company's focus is on continuous improvement. In fact, Woodall recommends that other companies follow the same approach: "Don't ever hesitate to continuously raise the bar." ■

3PL



Echo Global Logistics, Inc. • www.echo.com

Echo Global Logistics, Inc. (Nasdaq: ECHO) is a provider of technology-enabled transportation and supply chain management services. Echo maintains a proprietary, Web-based technology platform that compiles and analyzes data from its network of more than 30,000 transportation providers to serve its clients' needs. Offering freight brokerage and managed transportation services across all major modes, Echo works to simplify the critical tasks involved in transportation management.

OSO Intermodal • www.osointermodal.com

Customer relationships and service are the main focus at OSO Intermodal. Our team will provide you with innovative logistics solutions to get your products to their ultimate destination. With our industry knowledge and our extensive carrier base, we can offer unmatched service and flexibility. Whether across the state or across the continent, we go the extra mile to get you moving.

BARCODE/RFID

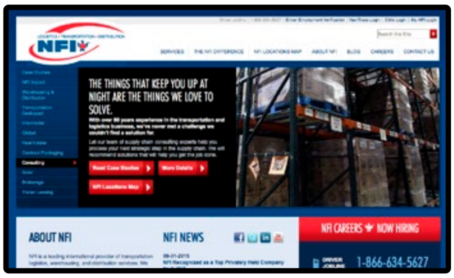
SATO America • www.satoamerica.com

SATO is a pioneer in the Automatic Identification and Data Collection (AIDC) industry, and the inventor of the world's first electronic thermal transfer barcode printer. It revolutionized the barcoding industry by introducing the Data Collection System (DCS) & Labeling concept—a total barcode and labeling solution providing high-quality barcode printers, scanners/handheld terminals, label design software, and consumables. SATO is one of the first in the industry to introduce a complete, multi-protocol EPC-compliant, UHF RFID solution. Turn to SATO for all your barcode and RFID printing needs.

DEDICATED CONTRACT CARRIAGE

NFI Industries • www.nfiindustries.com

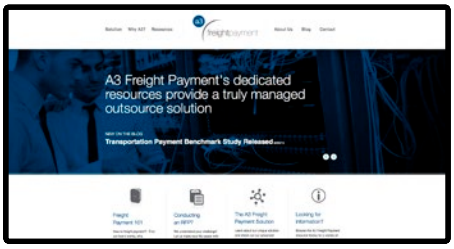
Founded in 1932, NFI offers a variety of integrated supply chain services to help businesses manage, grow, and succeed in today's marketplace. The company is one of the largest privately held third-party logistics providers in North America. NFI divisions include Warehousing and Distribution, Logistics, Transportation, Intermodal, Canada, Real Estate, Contract Packaging, Transportation Brokerage, Trailer Leasing and Storage, Solar, Global and Consulting services. NFI is an EPA SmartWay Transport and WasteWise Partner.



IN THIS SECTION:

Freight Payment/Audit Services

FREIGHT PAYMENT/AUDIT SERVICES

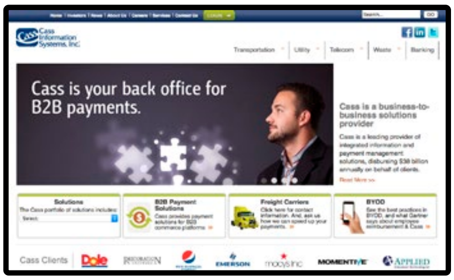


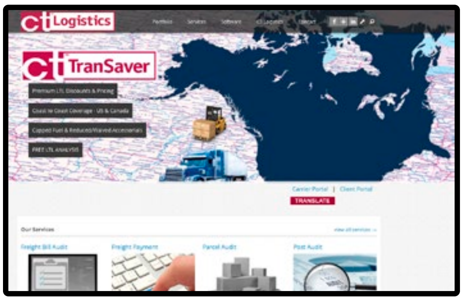
A3 Freight Payment • www.a3freightpayment.com

A3 Freight Payment partners with large-volume shippers who are seeking a high degree of customization, exceptional customer service, reliable processing, and minimum resource involvement in managing their solution. 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 our clients.

Cass Information Systems, Inc. • www.cassinfo.com

Cass is the nation's oldest and largest provider of freight bill payment, audit, and rating services. We offer a wide array of services for processing and paying freight bills, as well as our industry-leading Internet reporting service, CassPort. In business since 1906, and providing freight payment services since 1956, Cass continues to offer stability, security, and expertise in the freight audit, payment, and information market.



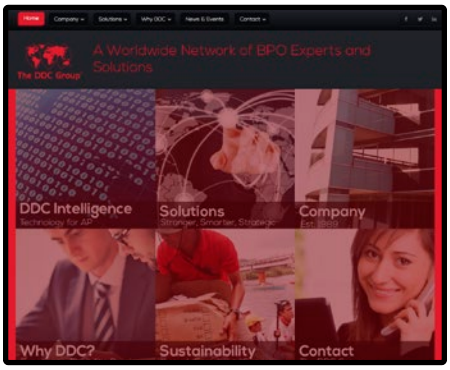


CT Logistics • www.ctlogistics.com

CT Logistics can help you save money, no matter your company's size. For small and medium-sized shippers, CT Logistics offers its TranSaver shipper cooperative buying program. Larger shippers can simplify their freight spending with CT Logistics' exclusive FreitRater freight bill rating and processing system. And businesses of all sizes can benefit from AuditPay freight payment services. Add to these offerings a wealth of online collaboration and reporting tools, and it's easy to see why shippers have trusted CT Logistics with their freight payment needs for more than 86 years.

CTSI-Global • www.ctsi-global.com

For more than 50 years, CTSI-Global has been a valuable resource to companies by providing the technology and industry expertise to help them manage all aspects of their supply chain—physical, informational, and financial—through freight audit and payment, transportation management systems (TMS), information management tools, and global consulting. The end results are improved shipping efficiencies, greater control, and significant ongoing savings. CTSI-Global is your link to supply chain solutions.

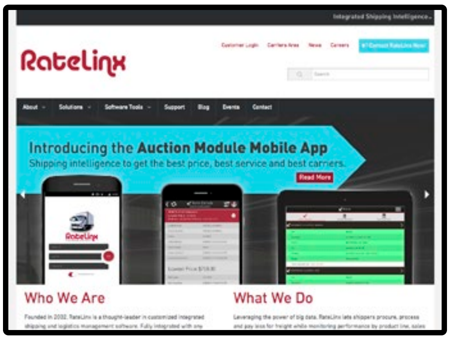


DDC FPO • www.datacapture.com

DDC FPO is a leading specialist in Freight Process Outsourcing (FPO): digitization and processing of freight-related documents. The company's team of experts designs and implements solutions specifically created for companies in the global freight industries. By combining onshore project management and scanning with offshore data processing capabilities, DDC FPO is able to supply fast, accurate, and economical data processing services to businesses around the world.

nVision Global • www.nvisionglobal.com

nVision Global is a leading international freight audit, payment, and logistics management solutions provider. With locations in North America, Europe, and Asia, our staff is fluent in more than 25 languages, and processes and pays freight invoices from more than 190 countries worldwide. Over the years, our customers have come to rely on our prompt, accurate Sarbanes-Oxley-compliant freight payment services, as well as our leading-edge information management analytical tools including global mapping, graphing, benchmarking, modeling, and network optimization analysis to help them manage their overall supply chain costs.

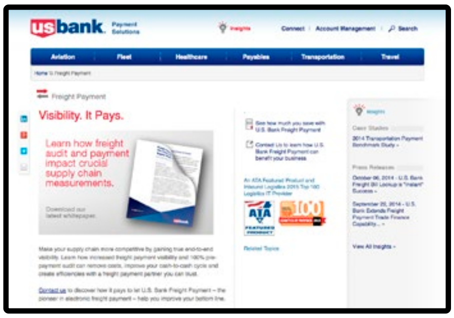


Ratelinx • www.ratelinx.com

RateLinx provides transportation management solutions, TMS technology, and freight payment and auditing for companies for all modes, as well as providing cutting-edge Vendor Compliance technology and methodologies for companies with vendor compliance programs and the vendors that utilize them. RateLinx manages and/or services freight in the billions of dollars for thousands of shippers both domestically and internationally, and is recognized as a leading manufacturer of integrated logistics software for small parcel, LTL, truckload, ocean, air, and expedited shipping. For more information, visit our website or contact us at sales@ratelinx.com.

U.S. Bank Freight Payment • usbpayment.com/visibility

U.S. Bank Freight Payment improves control and reduces costs for shippers and carriers with a global transportation payment network that automates invoice auditing, processing and payment; integrates trade finance; and provides powerful business intelligence. Visit usbpayment.com today to learn how we can strengthen your physical and financial supply chain.



IN THIS SECTION:

Materials Handling - Truck Equipment

MATERIALS HANDLING

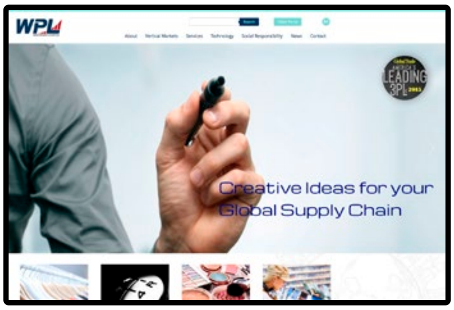
Sealed Air • www.sealedairprotects.com

Sealed Air is a leading global provider and manufacturer of a wide range of packaging and performance-based materials and equipment systems that serve food, medical, and an array of industrial and consumer applications. For more than half a century, Sealed Air employees around the globe have applied deep understanding of customers' businesses to deliver innovative packaging solutions. Operating in 51 countries, Sealed Air's widely recognized and respected brands include Bubble Wrap® cushioning, Fill-Air® Inflatable Packaging, Jiffy® protective mailers, and Instapak® foam-in-place systems.

RETAIL LOGISTICS

Wen-Parker Logistics, Inc. (WPL) • www.wen-parker.com

Wen-Parker Logistics provides a comprehensive menu of international logistics services including air and ocean freight forwarding and consolidation, customs brokerage, purchase order management, and warehousing and distribution. Our specialty is Fashion and Retail and we are proud to have a client list that includes some of the world's most respected brand names. Our broader expertise is in designing and delivering global supply chain solutions across many sectors. To learn more, call us at (888) 978-3029.



TMS

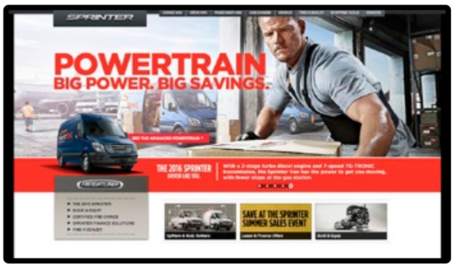
Fortigo, Inc • www.fortigo.com

Fortigo's team of experts specializes in logistics optimization and enterprise Web-based software. For companies seeking to reduce costs, improve customer satisfaction, and increase profitability, Fortigo automates, optimizes, and audits logistics decisions. Fortigo plugs into established supply chain applications, and provides rapid return on investment by optimizing and deploying closed-loop logistics processes, minimizing ship-to-order times, and streamlining collaboration with logistics providers.

TRUCK EQUIPMENT

Freightliner Sprinter • www.freightlinersprinterusa.com

Since its introduction in 1995, the Freightliner Sprinter Van has been using equal parts of brains and brawn to become an even better vehicle—and muscle past the competition in the process. Always on the cutting edge, the Freightliner Sprinter consistently delivers technological advances and class-leading features to help businesses do their best work. No surprise from a brand that has built better vehicles for 70 years. Visit the website to find authorized dealers.

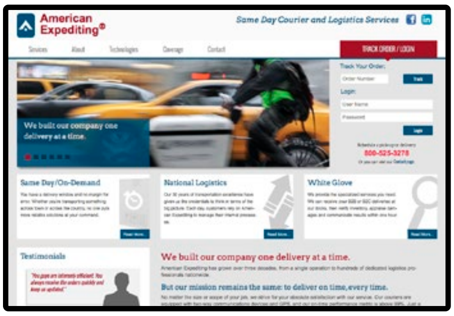


WEB_CITE CITY

www.inboundlogistics.com/web_cite

IN THIS SECTION:
Trucking

TRUCKING

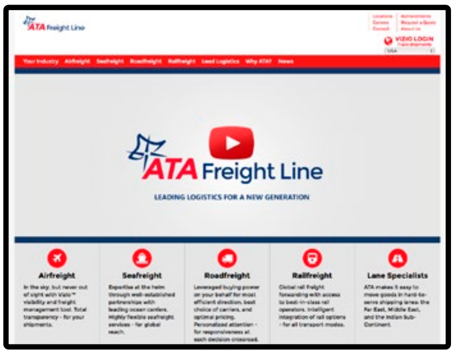


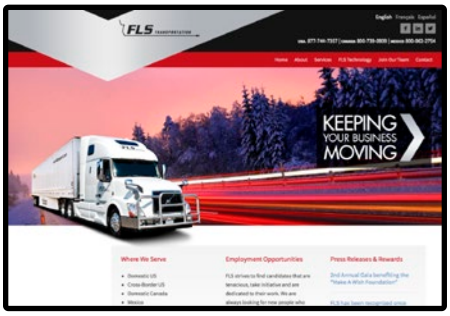
American Expediting Company • www.amexpediting.com

American Expediting has grown over three decades – from a single operation to hundreds of dedicated logistics professionals nationwide. But its mission remains the same: to deliver on time, every time. Couriers are equipped with two-way communications devices and GPS, and the on-time performance metric is more than 99 percent. From messengers, couriers with cars, vans and trucks, to next-flight-out and direct drive shipments, to warehousing, distribution, fulfillment, and more, American Expediting's solutions are custom-tailored to your exact requirements, schedule, and budget.

ATA Freight Line • www.atafreight.com

ATA Freight Line is a leading logistics provider, offering end-to-end design, implementation, and operational capabilities in freight forwarding, contract logistics, transportation management, and distribution management. The company offers every customer a service tailored to its specific needs, built on the firm's formidable experience across a broad range of market sectors. Its expertise extends to farm machinery and equipment, automotive, technology, consumer and retail, industrial, energy, and healthcare.





FLS Transportation • www.flstransport.com

FLS Transportation keeps your business moving with services including U.S., Canadian, cross-border, flatbed, and refrigerated truckload; expedited and specialized hauling; LTL; air and ocean; intermodal; and freight management. That's not all. Value-added services feature visibility software, EDI capabilities, and an account management program that arranges all loading, and schedules pickups and deliveries. FLS assigns each shipper a personal customer care representative, so you know someone is always available to speak to you. Ready to talk? Visit the website for details.

Landstar • www.landstar.com

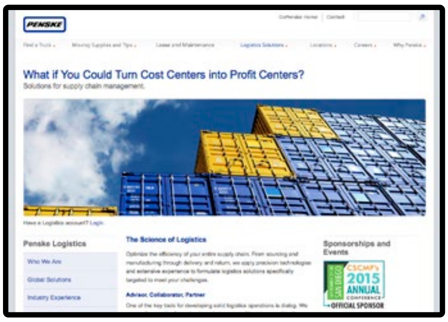
Landstar, a safety-first transportation services company, provides complete logistics services throughout the United States, Canada, and Mexico. Landstar's extensive brokerage network increases customer options as it brings a wider array of equipment options to handle the toughest transportation challenges. With innovative use of Internet technology, Landstar communicates in every medium, from the most sophisticated satellite tracking systems to the simplest pagers. That means customers know where their shipment is every step of the way, with every carrier selected. You'll find complete details on the website.

Lynden • www.lynden.com

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

Old Dominion Freight Line • www.odfl.com

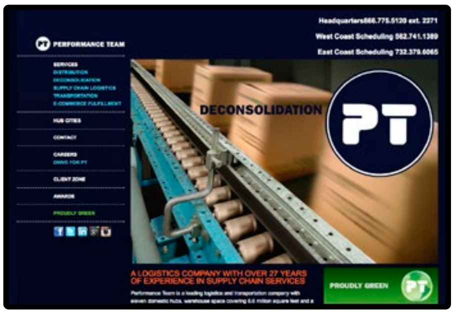
Old Dominion Freight Line is a less-than-truckload carrier providing complete nationwide service within the continental United States. Through its four product groups, OD-Domestic, OD-Expedited, OD-Global, and OD-Technology, the company offers an array of innovative products and services to, from, and between North America, Central America, South America, and the Far East. The company also offers a broad range of expedited and logistical services in both domestic and global markets.



Penske Logistics • www.penskelogistics.com

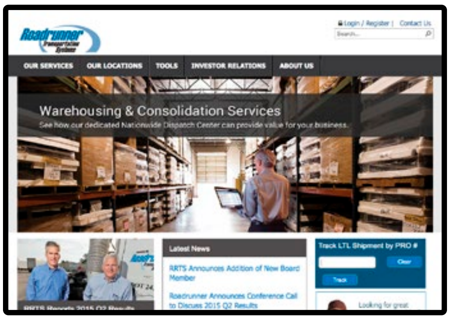
Penske Logistics is an award-winning logistics services provider with operations in North America, South America, Europe, and Asia. Our products and services range from dedicated contract carriage and distribution center management to transportation management and fully customized solutions. No matter what your needs or industry, Penske Logistics engineers supply chain solutions that deliver business results like boosting productivity, improving service, and shrinking carbon footprints. Call us today at 1-800-529-6531 to learn more.

Performance Team • www.performanceteam.net



Performance Team (PT) is an industry-leading third-party logistics company with nearly 30 years of experience in warehousing, distribution, consolidation and transportation. PT has 12 domestic hubs (and nearly 7 million square feet of space) strategically located near major ports, interstate highways, and intermodal rail lines, allowing us to provide the retail and manufacturing industries with flexible B2B and B2C solutions for the movement, handling, and distribution of goods. PT also offers a full suite of retail, wholesale, e-commerce, and omni-channel distribution and transportation services.

IN THIS SECTION:
Trucking

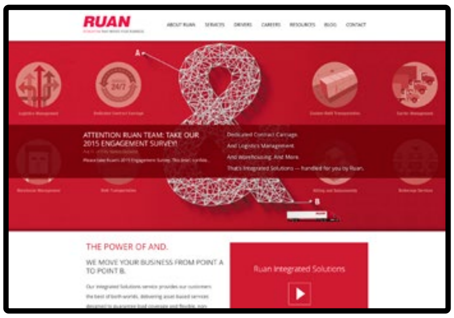


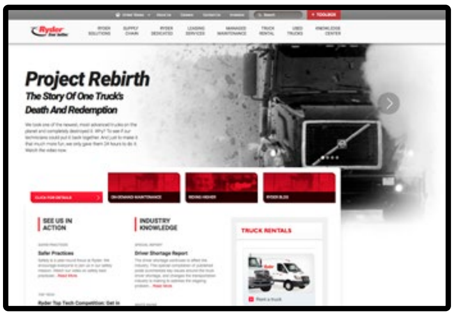
Roadrunner Transportation Systems • www.rrts.com

Roadrunner Transportation Systems provides flexible and responsive supply chain solutions throughout the United States and Canada. The company is dedicated to a customer-focused culture that delivers reliable and personalized service. It strives to maintain the highest ethical standards while continuing to be a best-valued logistics provider in the industry. The leading asset-light provider offers a full suite of solutions, from customized and expedited logistics to comprehensive global supply chain services.

Ruan • www.ruan.com

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





Ryder • www.ryder.com

Ryder Supply Chain Solutions is an end-to-end supply chain partner with nearly 80 years of experience helping customers in North America, the UK, and Asia transform their supply chains by delivering the best in operational execution. Ryder provides a full range of services, from optimizing day-to-day logistics operations to synchronizing the supply of parts and finished goods with customer demand. At Ryder, we understand that when it comes to logistics, Execution is Everything.

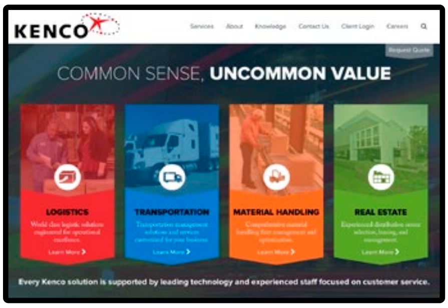
Werner Enterprises • www.werner.com

Werner Enterprises is a premier transportation and logistics company, with coverage throughout the United States, Canada, Mexico, and China. Werner maintains a global headquarters in Omaha, offering 24/7/365 service. Werner is among the five largest truckload carriers in the United States, with a service portfolio that includes long-haul, regional and local van capacity, temperature-controlled, flatbed, dedicated, and expedited. Werner's value-added services portfolio includes import and export freight management, PO and vendor management, truck brokerage, intermodal, load/mode and network optimization, and global visibility. Internationally, Werner provides freight forwarding and customs brokerage services, and is a licensed NVOCC.

IN THIS SECTION:

Trucking-LTL – WMS

TRUCKING-LTL

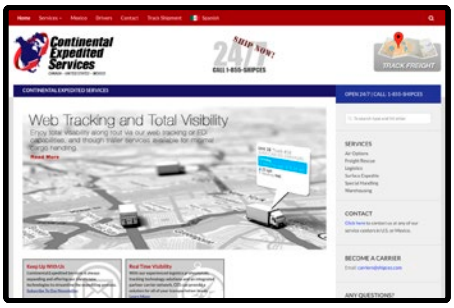


Kenco Logistic Services • www.kencogroup.com

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

Saia LTL Freight • www.saia.com

For nearly 90 years, Saia LTL Freight has been providing customers with fast, reliable regional and interregional shipping. With 147 terminals located in 34 states, Saia LTL Freight offers a range of products and services that are backed up by a guarantee like no other in the industry. Our Customer Service Indicators, or CSIs, allow us to measure our performance each month against a set of six indices that our shippers said are the most important to them.



Continental Expedited Services, Inc. • www.shipces.com

Continental Expedited Services (CES) is one of the largest and fastest-growing providers of premium transportation services in North America, accommodating a full range of transportation solutions with one-call, door-to-door services to and from almost any location in the world. CES's 24-hour service center can provide, within minutes, a competitive price and response time for your time-sensitive freight. When you have a critical shipping emergency, call CES for the most reliable expedited service throughout the United States, Mexico, Canada, and now around the world.

WMS

Magaya Logistics Software Solutions • www.magaya.com

Magaya's logistics software is designed specifically for freight forwarders, NVOCCs, logistics providers, warehousing and distribution centers, importers, exporters, and others in the logistics industry. Our software is a complete package that integrates logistics, communication, and accounting features built on the award-winning Magaya Network. Companies can exchange documents for shipping, and more, with their customers and agents worldwide via the Network and give them real-time tracking.

White Paper Digest

Industry experts amass supply chain management best practices and skill sets, and invest in new research and evaluation tools. Now you can benefit. *Inbound Logistics* has selected this collection of whitepapers that will give you a jump on important supply chain issues. For more information on any of these whitepapers, visit the Web sites listed below.

Weber Logistics

TITLE: ***How to Reduce Chargebacks in Your Vendor Compliance Program***
DOWNLOAD: *bit.ly/1JafPKQ*
SUMMARY: Retailer chargeback penalties for non-compliant shipments are a profit-draining reality for many consumer goods manufacturers. Companies with the will and the resources to prevent and refute chargebacks can avoid hundreds of thousands, even millions, in lost profit. This paper provides background on the origins and rationale for chargebacks, followed by a seven-step process for avoiding or overturning these costly penalties.

Crown Equipment

TITLE: ***Changing Metrics—and Mindsets—in the Warehouse***
DOWNLOAD: *bit.ly/1KOql5n*
SUMMARY: Forklift connectivity provides the visibility to manage fleets for greater safety and productivity, and is a key building block of the connected warehouse of the future. This three-part whitepaper series captures the technology adoption best practices Crown's team has observed and implemented in diverse materials handling applications. The purpose of the series is to help accelerate forklift fleet management adoption and prepare the industry for more complex technology initiatives.

enVista

TITLE: ***Find the Money: How a Transportation Spend Diagram Can Help***
DOWNLOAD: *bit.ly/1NqBYIP*
SUMMARY: Leaders in transportation look for ways to reduce costs while improving service levels as they conduct strategic assessments or solution designs. In this whitepaper, learn how developing a simple, one-page transportation spend diagram at the beginning of your strategic assessment will identify savings opportunities throughout your transportation operations.

Penske Logistics

TITLE: ***Transportation Trends and Insights***

DOWNLOAD: *bit.ly/1NqC2s7*

SUMMARY: Each month, Penske publishes *Transportation Insights*–articles designed to inform and enlighten those in the transportation industry. This downloadable e-book is a collection of some of Penske's best recent *Insights*, centered on the topics of talent shortage, driver health and well-being, and safety and compliance. Each piece features information from industry insiders or thought leaders, and offers relevant information on some key areas that impact your business the most.

Mettler-Toledo

TITLE: ***Five Steps to Food Safety***

DOWNLOAD: *bit.ly/1Ls1OGz*

SUMMARY: Food safety and quality has always been important. With recent reports of contamination on the rise, however, it is more vital than ever that food and pharmaceutical manufacturers are equipped with top-quality product inspection equipment. This whitepaper provides food and pharma companies with a five-point checklist to ensure optimal protection against foreign body contamination. Topics include understanding regulations, knowing your product, boosting risk awareness, optimizing productivity, and relying on the experts.

C3 Solutions

TITLE: ***Understanding Chain of Responsibility in the Supply Chain***

DOWNLOAD: *bit.ly/1KOqh5I*

SUMMARY: With increasing traffic congestion, safety on the highways is of great public concern. Recent incidents involving heavy vehicles are influencing the legislative landscape across the world. Regulatory bodies recognize that responsibility for highway safety goes well beyond mere driver compliance to Hours-of-Service regulations, thus bringing forward the concept of Chain of Responsibility (CoR). This whitepaper explains CoR, how it has been implemented in other jurisdictions, how it may affect your business, and what you need to do to ensure you are prepared and protected.

Share your whitepaper with *IL* readers!

WhitePaper Digest **is designed to bring readers up-to-date information on all aspects of supply chain management. We're building a database of SCM whitepapers, and you can help. E-mail us with whitepaper recommendations: editorial@inboundlogistics.com**

A&R Logistics, a provider of dry-bulk transportation, packaging, distribution, and logistics solutions, entered into a collaboration agreement with rail transportation company **Union Pacific** (UP) to establish a transportation and plastics packaging facility near UP's Dallas Intermodal Terminal. The new site will handle the increasing volume of plastic resin exports, which is expected to more than triple, from $6.5 billion in 2014 to $21.5 billion by 2030.

//Services//

Supply chain solutions provider **NFI** added nine new facilities to its real estate portfolio in the first six months of 2015. Totaling more than 3.5 million square feet of space, the distribution centers, located across Pennsylvania, Texas, Mississippi, North Carolina, and New Jersey, serve the retail, home goods, grocery, and automotive industries.

The **Port of Vancouver USA** opened a new freight-rail entrance in Vancouver, Wash., a $30-million undertaking designed to help trains move easily into and out of the port. Part of the port's $275-million West Vancouver Freight Access project, the new entrance is expected to reduce regional rail congestion by up to 40 percent.

Kenco, a provider of integrated logistics solutions, is set to break ground on a new warehouse facility in Zeeland, Mich., to serve long-time customer Mead Johnson Nutrition. The project includes a 230,000-square-foot warehouse with 28 loading docks and 150 truck trailer parking spots.

Fleet operator **Mitsui O.S.K. Lines (America)** established a new shipment management center (SMC), a single entry point for customer service and shipment management within the United States and Canada. The new SMC functions are spread throughout existing office locations in Atlanta and Lombard, Ill.

Global supply chain specialist **APL Logistics** opened its largest Southeast Asian single-roof facility in Ho Chi Minh City, Vietnam. The new container freight station is located near major seaports and airports around Ho Chi Minh City and includes more than 500,000 square feet of warehouse space and 170 loading and receiving bays.

Port Logistics Group, a gateway logistics services provider, set up shop in Savannah, Ga. The new operation is located six miles from the Port of

Savannah in a 685,000-square-foot facility, where the company performs pick/pack and value-added services.

Specialized services provider **FIDELITONE**'s Last Mile Delivery Business Unit in North Carolina moved from High Point to Charlotte. The new facility increases FIDELITONE's warehouse square footage by nearly 50 percent and simplifies how products are received, assembled, prepared, and delivered for increased efficiencies and service levels.

Motor carrier **R+L Carriers** opened a service center in Kennesaw, Ga. This facility provides access to the I-75, I-575, and I-285 shipping corridors and allows for guaranteed a.m. delivery and guaranteed hourly window delivery.

Gov. Nathan Deal, the Georgia Ports Authority, Murray County, and **CSX Transportation** signed a memorandum of agreement establishing the Appalachian Regional Port in Chatsworth, Ga. Set to open in 2018, the inland terminal will serve as a direct link from the Port of Savannah to north Georgia, Alabama, Tennessee, and parts of Kentucky.

Roadrunner Transportation Systems, a transportation and logistics services provider, changed the name of its Transportation Management Solutions operating segment to **Global Solutions** to reflect the growing importance of its global capabilities. The operating segment structure remains the same and continues to provide a variety of global supply chain solutions.

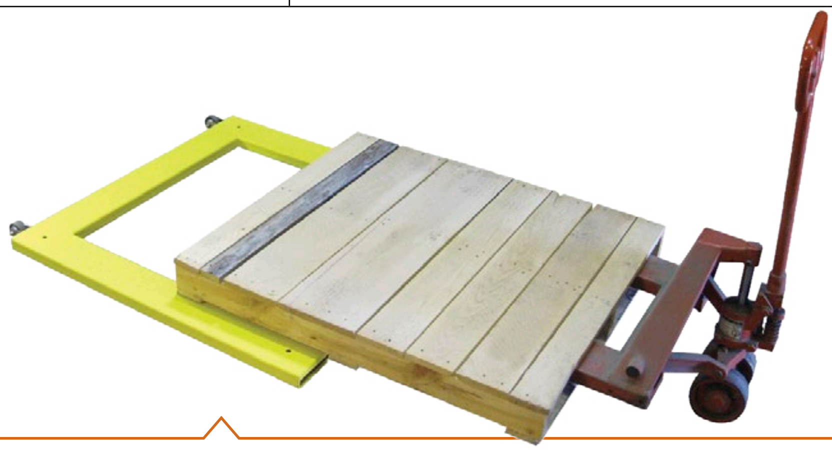
Hydraulic equipment manufacturer Presto Lifts expanded its LiftStik line of lifter transporters. The Model PLS53-150 is compact and maneuverable for use in assembly areas, retail stores, and food manufacturing and pharmaceutical facilities. Its mast-style configuration places the platform and load directly over the four wheels for stability.

Piedmont Moving Systems is now solely a commercial logistics solutions provider. With 100,000 square feet of warehouse space, and specialized services such as the transportation of trade show exhibits, the company discontinued its residential moving services to focus on commercial logistics.

// Products //

Rytec High Performance Doors introduced the Turbo-Slide, a high-speed freezer door that opens at 120 inches per second to enable high-volume and high-cycle freezer operations. The solid-panel offering minimizes energy loss and cold air infiltration for both energy and materials handling efficiency.

Raymond Corporation introduced the Model 6210 walkie straddle stacker truck, featuring AC technology. It navigates easily in tight areas with precise control for applications ranging from manufacturing to retail backrooms.



Fairbanks Scales, a weighing equipment manufacturer, released its new Yellow Jacket U-shaped floor scale, which decreases weighing times by up to 50 percent in applications utilizing pallet jacks. It allows operators to weigh standard and non-standard pallets and skids without removing the pallet jack.

Nimble Scooters offer an ergonomic solution for warehouse workers prone to chronic foot pain, nerve inflammation, plantar fasciitis, and stress fractures. By reducing the amount of walking in warehouses, the cargo scooters lower injury rates and speed the picking and packing process, thus increasing productivity.

Smart Vision Lights, a designer and manufacturer of LED lights for industrial applications, introduced a low-cost T-SLOT LED light series featuring diffusing optics. The redesigned low-voltage light bars slide into aluminum extrusions with no extra mounting needed, for use in applications with limited distance or tight area challenges.

//Technology//

A.N. Deringer expanded its integrated, online application *eShipPartner*. *ACI eManifest* and *ACE eManifest* are the latest additions to the user-friendly suite of tools that includes *eShipPartner Invoice*, *Analytics*, *Production Planning*, and other applications that automate the logistics process and provide layers of visibility.

The Port of New York and New Jersey's Council on Port Performance launched the *Terminal Information Portal System*. The central web portal lets shippers check container availability and export booking status as well as obtain terminal updates. Users can also get information on empty container return locations and vessel schedules.

LogFire, a cloud-based provider of supply chain fulfillment solutions, integrated its warehouse management system with *Oracle Transportation Management*, creating a 100-percent cloud-based supply chain execution convergence solution.

VeriShip, a parcel audit and intelligence company, launched the *VeriShip Intelligence Platform (VIP)*. The cloud-based parcel intelligence offering helps shippers understand complex data points and use that information to uncover savings opportunities. *VIP* offers access to carrier invoice data and consists of configurable dashboards and graphs.

DHL Express Sub-Saharan Africa launched pocket-sized, all-touch computers that offer shippers real-time shipment visibility, enhanced electronic proof of delivery, and on-time billing. The TC55 scanners operate on an Android platform and have built-in location services and GPS navigation capabilities.

LogistiFlow launched a cloud-based service that organizes freight quotes for shippers for one flat monthly fee. The new program lists price and transit time from chosen carriers in a simple format.

PeopleNet, a Trimble Company and provider of fleet mobility technology, introduced the *ConnectedFleet* platform and *ConnectedDriver* mobile application suite. Through the *ConnectedFleet* platform, fleets can subscribe to specific data and receive it in near real-time. *ConnectedDriver* allows drivers to stay connected with dispatch, trip, messaging, and hours of service information while away from the truck.

Key Software Systems, a software solutions developer, released *Fleet Commander*, a real-time fleet management system designed to boost visibility of fleet assets, improve driver safety, and reduce maintenance and fuel costs. It includes reporting, device assignment profiles, GPS tracking, geofencing, driver performance monitoring, diagnostic alerts, and DOT compliance.

Telematics and fleet management solutions provider **uDrove** and **ITS Dispatch** integrated their product lines. uDrove's desktop and mobile solutions now work seamlessly with the software provided by ITS Dispatch, a web-based product for carrier fleets and freight brokers.

//Transportation//

UTi Worldwide, a global supply chain services and solutions provider, launched a guaranteed weekly rail freight service between China and Europe. The Iron Silk Road rail service's first link is between Harbin and Hamburg, offering lower rates than air freight and shorter transit times than ocean freight (15 days, eastbound or westbound).

Cargomatic, a technology platform that connects shippers and truckers in real time, officially launched in the New York City metropolitan market. The app allows shippers to locate nearby truckers that have available freight capacity. Cargomatic has been in beta stage in New York since early 2015 and has helped expedite local shipments throughout New York, New Jersey, Connecticut, and Pennsylvania.

UPS expanded the UPS Access Point network, a local solution for consumers and small businesses. UPS Access Point locations offer package pickup and drop off, and include local businesses, primarily neighborhood stores with extended evening and weekend hours.

CEVA Logistics, a supply chain management company, launched a once-a-week LCL service from Singapore to New York. The guaranteed weekly direct sailing service takes approximately 23 days from port to port.

IAG Cargo expanded and indefinitely extended its capacity partnership with Qatar Airways, one year from the signing of their landmark freighter deal. Qatar Airways now operates nine routes on which IAG Cargo purchases capacity, in what has become one of the largest cargo partnerships of its kind.

CHM Maritime, an affiliate company of Cashman Equipment Corp., added two 300-foot x 100-foot deck barges to its fleet, located in Tampico, Mexico. Both barges, the *JMC 3003* and *JMC 3009*, are fully classed by the American Bureau of Shipping and are available for immediate charter.

Con-way Freight, an LTL carrier and subsidiary of Con-way Inc., upgraded its fleet with the purchase of 875 new Daimler Freightliner tractors to replace older units. All new tractors are equipped with Drive Safe Systems, the company's suite of driver alert and crash avoidance technologies.

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OCT 5

American Production and Inventory Control Society

APICS 2015

www.apics.org | Las Vegas, Nev. | OCT 5-7

AUDIENCE: Supply chain and logistics professionals
FOCUS: Best practices in sustainable supply chains, solutions exhibition, the future of supply chain and operations management

CONFERENCES

OCT 5–9, 2015 Boston, Mass.
International Quality and Productivity Center

GDP & Temperature Management Logistics Global Forum

www.coldchainglobalforum.com

AUDIENCE: Cold chain stakeholders
FOCUS: Evolution of the supply chain, FDA's risk-based supply chain strategies, applying data analytics to the temperature-controlled supply chain, new challenges in the European Union GMP Guide, supply chain distribution practices

OCT 8, 2015 Baltimore, Md.
Barcoding, Inc.

Executive Forum 5: Be Efficient, Accurate, Connected

bit.ly/1f5Xdlc

AUDIENCE: Supply chain management professionals
FOCUS: Strategies for supply chain management, barcode solutions, RFID, asset tracking, container tracking, warehouse management, IT security, hybrid systems, Internet of Things

OCT 19–21, 2015 Chicago, Ill.
Customized Logistics and Delivery Association

PARCEL Forum '15

www.parcelforum.com

AUDIENCE: Distribution, logistics, supply chain, and warehouse managers; small-package supply chain stakeholders
FOCUS: Parcel industry educational tracks and case studies; dimensional weight pricing; home delivery strategies; distribution center tours; regional carrier, warehousing, and materials handling exhibition

OCT 25–27, 2015 Niagara Falls, Ontario
Canadian Institute of Traffic and Transportation

Canada Logistics Conference 2015

www.citt.ca/conference

AUDIENCE: Canadian supply chain stakeholders
FOCUS: Supply chain maturity, packaging optimization, sustainability reports, Canadian regulations, the 2016 economic outlook, and the St. Lawrence Seaway

OCT 27–29, 2015 Miami, Fla.
WTG Events

13th Annual Supply Chain & Logistics Summit

www.supplychain.us.com

AUDIENCE: Logistics and supply chain professionals
FOCUS: Leaders in the supply chain renaissance, economic forecasts for the supply chain, talent management, risk management, visibility and transparency in the supply chain, supply chain optimization

NOV 10–11, 2015 Philadelphia, Pa.
Worldwide Business Research

LogiChem

www.logichemus.wbresearch.com

AUDIENCE: Chemical supply chain and logistics professionals
FOCUS: Enterprise risk management; incorporating risk planning into integrated business planning; continuous process improvement; use of intermodal logistics to improve sustainability, reduce cost, and mitigate risk; use of remote telemetry to optimize the distribution, handling, and replenishment of chemicals in mini-bulk and intermediate-bulk containers

NOV 16–19, 2015 New Orleans, La.
National Industrial Transportation League

2015 NITL Annual Conference & Freight Exhibition

www.nitl.org

AUDIENCE: Supply chain, logistics, and transportation professionals
FOCUS: Transportation-focused educational sessions and roundtables, transportation equipment and technology exhibition

NOV 19–20, 2015 New York City, N.Y.
Progressive Railroading

RailTrends

www.railtrends.com

AUDIENCE: Rail-industry professionals
FOCUS: Updates and forecasts for rail industry, including the outlook for the state of freight, Union Pacific Railroad's intermodal strategy, the industrial build-out forecast, and intermodal and logistics convergence

DEC 1–3, 2015 Arlington, Va.
Worldwide Business Research

Defense Logistics

www.defenselog.com

AUDIENCE: Defense logistics and supply chain stakeholders
FOCUS: Best practices and trends in defense logistics, sustaining and supporting a widely dispersed troop base, collecting and analyzing data, filling the global talent gap

SEMINARS & WORKSHOPS

NOV 5–6, 2015 Cambridge, Mass.
MIT Sloan Executive Education

Supply Chain Strategy and Management

executive.mit.edu

AUDIENCE: Senior managers responsible for the general business and strategic management of product supply and development
FOCUS: Strategies and best practices for improving supply chain performance; the concept of technology clockspeed for strategically managing and optimizing supply chains; supply chain integration; technology sourcing; make-buy decisions; strategic partnering and outsourcing; and IT and decision-support systems

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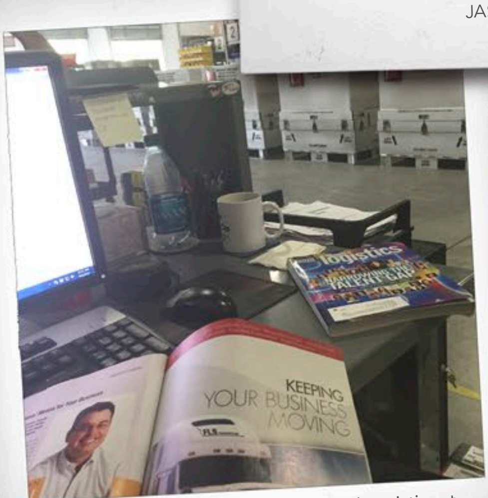
I throw it into my beach bag along with the latest Lee Child. Jack Reacher will have to wait.

JASON VARICK, Brigantine, N.J.

A calm, beautiful day calls for sitting on a bench and contemplating risk management strategies.

MTL, Edgewater, N.J.



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MIKE LILE, Jacksonville, Fla.

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