inbound
logistics
www.inboundlogistics.com
THE MAGAZINE FOR DEMAND-DRIVEN LOGISTICS • JUNE 2014

INCLUDES SPECIAL SUPPLEMENT:
CHEMICAL LOGISTICS

LEAN

WINNING STRATEGIES FOR CUTTING WASTE

ALSO:
75 GREEN SUPPLY CHAIN PARTNERS
LANDING A JOB IN LOGISTICS

June 2014 • Vol. 34 • No. 6

INSIGHT

INPRACTICE

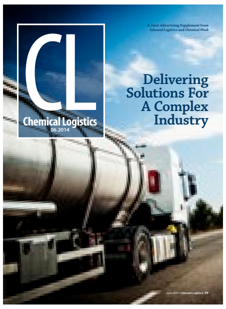
INDEPTH

June 2014 • Vol. 34 • No. 6

INFOCUS

INFO

INDEPTH



TRUCKING SURVEY
bit.ly/IL-5MinTrucking

inbound logistics
www.inboundlogistics.com

QUICKBYTES

5-MINUTE TRUCKING SURVEY

Your answers to our short but sweet survey will enable us to provide more content to help you manage transportation challenges.
bit.ly/IL-5MinTrucking

LOGISTICS PLANNER 2014

Explore in-depth profiles of more than 160 industry-leading companies offering solutions to your need for speed, lower inventories, and integrated logistics expertise. View corporate videos, social media feeds, and instantly send an RFP to multiple companies.
bit.ly/IL-Planner

WEB_CITE CITY®

The most comprehensive and clutter-free online directory of supply chain websites – organized by category, cross-referenced, and fully searchable. You can browse by category or search for companies by name.
bit.ly/IL-WCC

LOGISTICS & SUPPLY CHAIN NEWS

For up-to-the-minute information, bookmark the *IL* news page. Enjoy opinions, commentary, and links to the latest news to help you stay on top of your game.
bit.ly/IL-News

ONLINE EXCLUSIVES

Fight Inventory Pain Points bit.ly/1lasOfK

Brian Sutter, Director of Marketing, Wasp Barcode Technologies

Inaccurate inventory counts. Costly end-of-year write-offs. Time spent looking for lost inventory. Inventory problems such as these happen at every company. But, there is a way around these annoying mishaps that waste money and time. You'll find directions in this article.

What Transportation Providers Gain From an Integrated TMS Platform bit.ly/1l8w5MQ

Scott Vanselous, Executive Vice President, Marketing, TMW Systems

With an integrated transportation management software (TMS) platform, service providers can gain complete visibility over their diverse and complex operations. The technology can also generate cost savings through operational efficiencies, starting with order entry and carrying through to load execution and billing. And that's great news for their customers.

Preparing for New Trade Regulations bit.ly/1kmpxtY

Matt Goodman, Vice President, Global Trade Management, Livingston International

Every company that imports into or exports from the United States or Canada will be affected by major trade regulations that require new licensing and significant software updates. To maintain your hard-earned profits, here's how to prepare now for these pending changes.

The Importance of Contingency Planning In Automotive Supply Chains bit.ly/1xETlvR

Brad Brennan, Managing Director, Evolution Time Critical

Emergency logistics specialists have been championing the benefits of focused supply chain management for a long time. Vehicle manufacturers are now adopting these policies, enabling the introduction of new, dynamic, and higher-risk logistics strategies. Supply chain contingency can not only safeguard current operations, but also provide support for the increasingly fleet-footed manufacturing footprint of major original equipment manufacturers.

Keep up to date with the very latest: facebook.com/InboundLogistics @ILMagazine linkedin.com/company/inbound-logistics

CHECKINGIN

Felecia Stratton

by Felecia Stratton | **Editor**

Reaching for the Stars

The United States is challenged by a lack of skilled and technical workers. Some claim widespread offshoring created a generation of job attrition and lost experience. But offshoring is only a symptom of the real problem.

Previously, the U.S. education system failed to see and appreciate the true worth of blue- and gray-collar workers, and encouraged students to pursue non-technical career paths instead. Want proof? Browse the help-wanted ads and note the thousands of unfilled positions at companies across the nation requiring technical skills.

That focus is now changing, as colleges and universities across the United States continue to add logistics and supply chain courses, certifications, and degree programs. Nonetheless, this talent gap remains a glaring omission in many technical fields, especially among young professionals in supply chain management.

All the Gray Hairs are Gone. Now What?

I have had many discussions with supply chain professionals over the past few years about the lack of middle-management expertise in the supply chain. While the current truck driver shortage grabs all the headlines, the absence of supply chain engineers and logisticians coming up through the ranks goes largely ignored.

Quite simply, we're in the middle of a generational shift. Much of the human intelligence, leadership, and vision that shaped and shepherded today's supply chain practice, and achieved a high level of proficiency, is retiring. The U.S. economy faces a loudly ticking biological clock: By 2025, 75 percent of the total workforce will be millennials, according to ThomasNet.com's *2013 Industry Market Barometer* survey. The impact on the U.S. supply chain will be dramatic.

If we don't invest in and steward the next generation of supply chain and procurement disciples, others will supplant our position as the global leader in supply chain practices. With this call to action in mind, *Inbound Logistics* is proud to support our sister company ThomasNet.com and the Institute for Supply Management by co-sponsoring a new recognition program—*30 Under 30 Rising Supply Chain Stars*. Our shared goal is to generate awareness of this new generation by celebrating the accomplishments of young, bright, passionate millennials who work in supply chain management.

By showcasing these rising stars, the *30 Under 30* program becomes a powerful asset that can be used to promote the importance of supply chain careers, and help close the talent gap.

Do you work with a bright, young purchasing/SCM professional? Nominate them for a spot on this list of rising stars, who will be profiled in an upcoming issue of *Inbound Logistics*. The deadline for submissions is July 31, 2014. For details: bit.ly/30under30SCM. ■

inbound logistics

Vol. 34, No. 6 June 2014

THE MAGAZINE FOR DEMAND-DRIVEN LOGISTICS

www.inboundlogistics.com

STAFF

PUBLISHER Keith G. Biondo *publisher@inboundlogistics.com*

EDITOR Felecia J. Stratton *editor@inboundlogistics.com*

MANAGING EDITOR Catherine Overman *coverman@inboundlogistics.com*

SENIOR WRITER Joseph O'Reilly *joseph@inboundlogistics.com*

CONTRIBUTING EDITORS Merrill Douglas • Suzanne Heyn • Deborah Ruriani

CREATIVE DIRECTOR Michael Murphy *mmurphy@inboundlogistics.com*

SENIOR DESIGNER Mary Brennan *mbrennan@inboundlogistics.com*

DIGITAL DESIGN MANAGER Amy Palmisano *apalmisano@inboundlogistics.com*

PUBLICATION MANAGER Sonia Casiano *sonia@inboundlogistics.com*

PUBLISHING ASSISTANT Jason McDowell *jmcdowell@inboundlogistics.com*

CIRCULATION DIRECTOR Carolyn Smolin

SALES OFFICES

PUBLISHER: **Keith Biondo**
(212) 629-1560 • FAX: (212) 629-1565
publisher@inboundlogistics.com

WEST/MIDWEST/SOUTHWEST: **Harold L. Leddy**
(847) 446-8764 • FAX: (847) 305-5890
haroldleddy@inboundlogistics.com

Marshall Leddy
(612) 234-7436 • FAX: (847) 305-5890
marshall@inboundlogistics.com

MIDWEST/ECONOMIC DEVELOPMENT: **Jim Armstrong**
(314) 984-9007 • FAX: (314) 984-8878
jim@inboundlogistics.com

SOUTHEAST: **Gordon H. Harper**
(404) 229-9691 • FAX: (404) 355-2036
south@inboundlogistics.com

MOBILE, AL: **Peter Muller**
(251) 232-1920 • FAX: (251) 343-0541
petermuller@inboundlogistics.com

NORTHEAST: **Rachael Sprinz**
(212) 629-1560 • FAX: (212) 629-1565
rachael@inboundlogistics.com

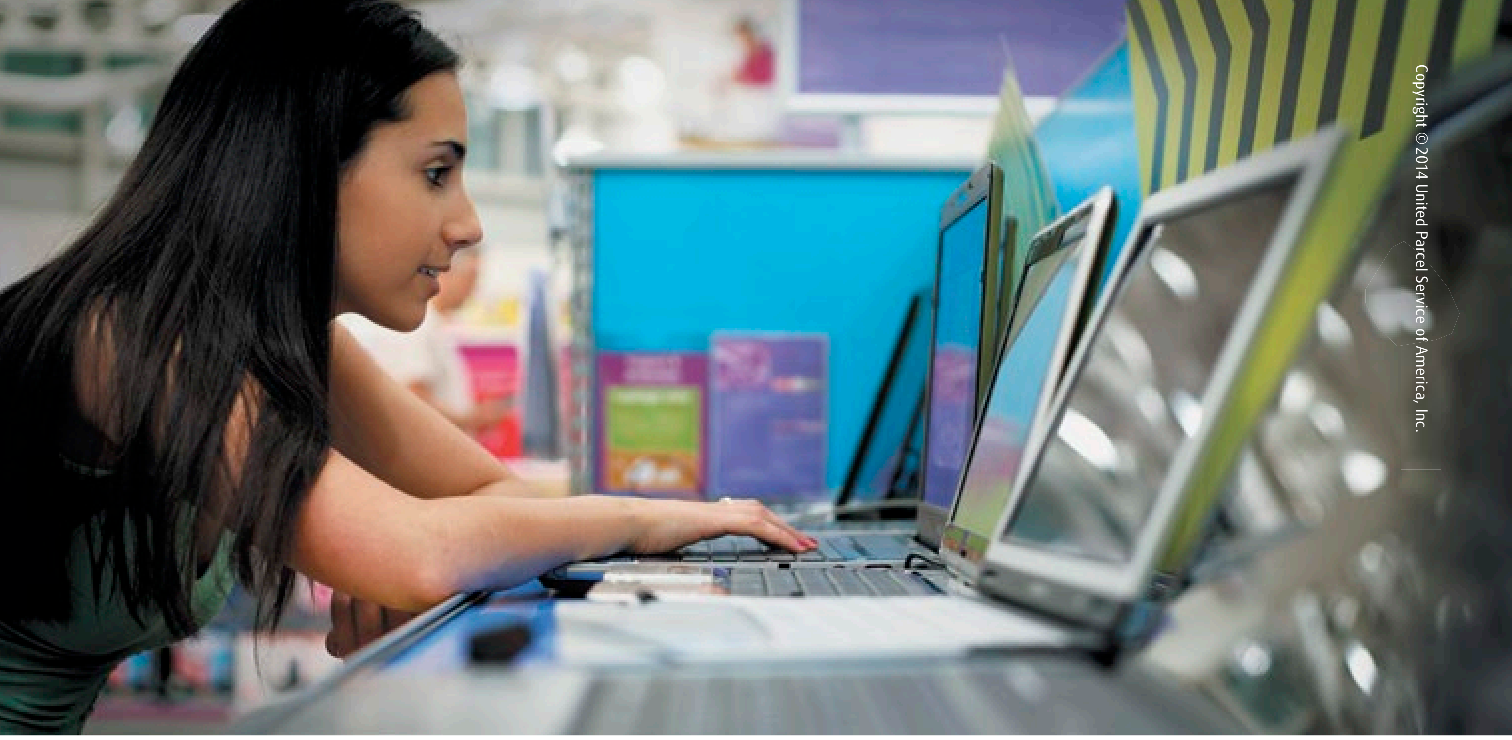
FREE SUBSCRIPTIONS

www.inboundlogistics.com/free

Inbound Logistics supports sustainable best practices. Our mission is rooted in helping companies match demand to supply, eliminating waste from the supply chain. This magazine is printed on paper sourced from fast growth renewable timber.

Inbound Logistics welcomes comments and submissions. Contact us at 5 Penn Plaza, NY, NY 10001, (212) 629-1560, Fax (212) 629-1565, e-mail: editorial@inboundlogistics.com. For advertising, reprint, or subscription information, call (212) 629-1560, or e-mail publisher@inboundlogistics.com. Inbound Logistics is distributed without cost to those qualified in North America. Interested readers must complete and return the qualification card published in this issue, or may subscribe online at www.inboundlogistics.com/free. Subscription price to others: in North America: $95 per year. Foreign subscriptions: $229. Single copy price: No. Amer. $10, foreign $19, back issues $15. Periodicals postage paid at New York, NY, and additional mailing offices.

twitter facebook LinkedIn



3 WAYS LOGISTICS CAN KEEP HIGH-TECH CUSTOMERS COMING BACK.

When UPS surveyed leaders in high-tech companies, we learned that a key challenge is maintaining the bottom line while improving the customer experience. This balancing act is not impossible. It just takes logistics, by UPS.

1) MOVE FASTER From international air freight to next-day air shipments, UPS can move critical parts or finished components quickly and reliably. And technology like UPS Paperless® Invoice can help reduce customs delays by up to 56%—enabling you to meet service agreements and satisfy customers.

2) RESPOND QUICKER With UPS technology like Quantum View®, you can see your supply chain and adjust to changing customer demands. With status updates for both package and freight shipments—incoming and outgoing—your supply chain is more visible, and, consequently your business is more responsive.

3) SIMPLIFY RETURNS When customers need to return, repair or replace a product, UPS has one of the largest portfolios of reverse logistics solutions to help streamline the process. And with millions of UPS access points worldwide, your customers can easily return their purchases to you.

For more high-tech industry insights, go to **ups.com/hightechsurvey**

ups®

WE ♡ LOGISTICS®

ups.com/hightechsurvey

DIALOG

THE ONGOING
CONVERSATION

Follow us:
facebook.com/InboundLogistics
twitter.com/ILMagazine
linkedin.com/company/inbound-logistics

Drop us a line:
editor@inboundlogistics.com
or send snail mail to
Dialog, c/o Inbound Logistics
5 Penn Plaza, NY, NY 10001

Inbound Logistics
22 MAY 2014
Maximizing the Benefits of Your TMS–bit.ly/UqQliy

Nicholas Carretta
I couldn't agree more with the points made in this piece, particularly with respect to selecting a solution that will not only meet current needs, but will scale accordingly with future growth. I also thought the section discussing the role of optimization was particularly valuable.

Inbound Logistics
6 JUNE 2014
Access to Reliable Transportation Regardless of Market Conditions–bit.ly/UqR2Od

Simon Wootton
I couldn't agree more!

Inbound Logistics
24 APRIL 2014
5 Steps for Improving Your Logistics Training–bit.ly/1ITKZfV

FitzMark Inc. @fitzmark
@ILMagazine We are always looking to improve our training. Thanks for publishing these tips.

Inbound Logistics
3 MAY 2014
10 Simple Ways to Optimize Your DC Network–bit.ly/16zfo6h

The Modal Group @ModalGroup
@ILMagazine Other ways to optimize a DC network: How about evaluating intermodal as a mode, and looking into Foreign Trade Zones?

Fronetics @Fronetics
5 JUNE 2014
Helpful info on a problem faced by many! RT @ILMagazine You Say You Need a Bigger #Warehouse?–hub.am/Ubdw5w

@Southeast Industrial Equipment
8 APRIL 2014
Someone can't take a hint...

I am interested in the Top 100 Logistics IT Providers matrix in your April 2014 issue. Our information systems are currently in their infancy and we are looking for potential companies to help us improve. Is this list available in another format that is easily sortable or filterable? It would be beneficial to have a dynamic list that we can manipulate to get a better idea of which companies to contact for our specific needs.

–Jonathan Redding,
Private Backhaul LLC

Editor's Note: The information in the Top 100 Logistics IT Providers chart is available at inboundlogistics.com/find-an-it-provider, a Decision Support Tool that lets you select the technology characteristics specific to your needs, and provides a list of companies offering those solutions. The RFP function then lets you easily contact many of those companies for more information.

HOT TOPICS | *IL* articles getting the most impressions on LinkedIn: The Must-Haves of a Warehouse Management Platform: bit.ly/1mKpYED • Maximizing the Benefits of Your TMS: bit.ly/1ixiLFF • Supply Chain Trends Impacting the Consumer Products Industry: bit.ly/1lAu2ab • The Fundamentals of Successful Value Chain Partnerships: bit.ly/1itbQhn • 2014 Top 100 Logistics IT Providers: bit.ly/1hHAGZj • FTZ: Basics & Benefits: bit.ly/1mvsawN

10TIPS

STEP-BY-STEP SOLUTIONS

by Deborah Catalano Ruriani

Implementing an ERP System

Using an enterprise resource planning (ERP) system can significantly enhance supply chain management performance by improving purchasing, inventory control, and information exchange between internal departments, as well as external partners. Mark Butler, manager of professional services at software solutions provider Cincom Systems, offers these insights on implementing an ERP system.

1 **Understand your current system's shortcomings.** Analyze why you need to change the current system. Is the software outdated? Does it lack the features you require to enhance on-time performance and throughput? Define the shortcomings in relation to your business practices to create a wishlist for the new system.

2 **Start in the boardroom.** Secure executive-level sponsorship to mitigate risk and ensure your goals for the new ERP system align with larger corporate goals. This applies to the initial key performance indicators, and the corresponding mapped plan for improving the manufacturing process—from the inbound processing of supplies to inventory management and the movement of goods through the internal system and on to the customer.

3 **Appoint a strong internal project team.** The project manager must understand the project, be organized and detail-oriented, know when to take the lead, and be able to negotiate. Add representatives from key business areas—operations, purchasing, inventory control, and customer service—to round out the group.

4 **Create internal mapping.** Establish a clear vision of your organization's processes, and identify the challenges. Then define new workflows to support improvement goals.

5 **Determine equipment needs.** For example, if you need real-time inventory data to meet performance goals, and you decide to implement mobile solutions and radio frequency identification (RFID) technology, the ERP you choose will need to support these tools.

6 **Define the budget.** Ensure all relevant costs—such as hardware, software, third-party implementation, and training—are included.

7 **Engage the entire company.** Keep the project team informed, but also periodically update the whole company about the ERP implementation's progress. Communication will help create a positive teamwork environment for all involved.

8 **Resist the urge to use all the bells and whistles right away.** Some companies try to implement all the ERP system's features and functions from the start. Just because the system offers mobile-friendly apps, RFID integration, and retinal scan security, doesn't mean you need to use it. Pick the mission-critical functionality, then deploy less-critical functionality later.

9 **Update business processes selectively.** Carefully weigh whether to customize the software to conform to your processes, or change your processes to work within the standard solution. Your process may better suit the operation than the ERP's best practice does. In general, the biggest improvements usually involve some level of reevaluating business processes in light of current conditions.

10 **Evaluate regularly.** Create a plan to periodically evaluate the system. Include participants from all areas of the organization to gauge how well the system is working, decide what you need to change, and identify functions to implement in the future. ■

© 2014 C.H. Robinson Worldwide, Inc. All Rights Reserved. www.chrobinson.com
GO TO INBOUNDLOGISTICS.COM
AND VOTE FOR C.H. ROBINSON
AS YOUR TOP 3PL
ACCELERATE
YOUR ADVANTAGE®
Make a Strategic Move
You're committed to success. So is C.H. Robinson. Your success that is. It's easy to view your supply chain as a pawn rather than an essential advantage to your business. Turn your supply chain into the competitive edge you need to propel your success forward in today's global market.
Accelerate Your Advantage® | accelerateyouradvantage.com
C.H. ROBINSON
Got 3PL challenges?
Get free expert solutions at inboundlogistics.com/3pl

as told to Merrill Douglas

Senthil Arumugam: Building a Better Way

US LBM HOLDINGS CURRENTLY CONSISTS OF 12 building material distributors operating 60 locations across the United States. Our customers include builders and remodelers working on single- and multi-family homes and commercial buildings. Each distributor runs independently, serving its local market with its own delivery fleet and dispatching operation.

In my current position, I have three main responsibilities. First is keeping our locations and markets at the forefront of technology with strategic initiatives to serve customers better and faster.

Second is designing business processes that help our companies measure, manage, and improve operations, while sharing best practices. For example, how does one location load a truck and turn it around in 30 minutes, when it takes another company 60 minutes?

My third role involves facilitating kaizen events and other Lean initiatives for the distributors' operations as part of our corporate continuous improvement program.

My biggest project recently was implementing a delivery management system for our companies. After six months of evaluation, we chose the *Descartes Route Planner* from Descartes Systems Group. We have rolled it out at most of our older locations, while continuing to integrate it into our newer acquisitions.

This implementation is challenging because our companies sell so many different kinds of product—lumber, roofing,

Senthil Arumugam is vice president of logistics and inventory management at US LBM Holdings, in Buffalo Grove, Ill. He has held this position since 2012.

RESPONSIBILITIES

Benchmarking best practices, implementing technology, consulting on supply chain and continuous improvement, developing mobile applications.

EXPERIENCE

Lean materials coordinator, Alliance Laundry Systems; senior Lean consultant, Caledonia Group; director, logistics and inventory management, US LBM Holdings.

EDUCATION

BE, mechanical engineering, PSG College of Technology (India), 2001; MS, industrial engineering, specialization in supply chain management and manufacturing systems, Georgia Tech, 2003.

The Big Questions

Have you learned any lessons through on-the-job experience?
When you're leading a major initiative, there is no such thing as too much communication. You have to keep stakeholders informed about all developments—both good and bad.

If you could go back to school for fun, what would you study?
History and culture.

How do you relieve stress?
By spending time with my five-year-old daughter and one-year-old son. I also like meditating and running.

What are your personal goals?
I'd like to take a career break to travel with my family. I would especially like to use the skills I've gained in my career to contribute to my native country, India.

siding, cabinetry, windows, and others. We need a wide variety of trucks to accommodate product differences. Most delivery management systems aren't designed to work with such complex fleets.

We needed software to choose the right truck for the right materials—a boom truck to load shingles onto a roof, for example. The system had to account for each truck's weight and volume capacity, and for the time needed to load and unload specific products.

The system we chose had the necessary framework, but had never been implemented in the building materials industry. We did a lot of creative engineering to customize the software to meet our delivery scheduling needs.

As we continue to roll out this end-to-end delivery solution, change management poses an important challenge. To date, most of our locations used paper and pushpins to schedule deliveries. That process didn't let us share information with customers or measure performance.

The new system allows for real improvement, but represents a big shift in skills for many dispatchers. We have to develop good training programs, customized to the needs of individuals with different experience levels.

Using data from the delivery system, we built an iPhone application that provides real-time delivery tracking and notifications. We are proud of the early adoption rate and positive customer feedback. ■


PROUDLY GREEN
PT
PERFORMANCE TEAM
We're the only thing that should come between your products and your customers™
CONSOLIDATION / DECONSOLIDATION • CROSS DOCK • WAREHOUSING & DISTRIBUTION • PICK AND PACK • TRANSPORTATION • RETAIL STORE DELIVERY • SUPPLY CHAIN LOGISTICS • EDI / INTERFACE SERVICES
WWW.PERFORMANCETEAM.NET
(866) 775-5120
GREEN SUPPLY CHAIN PARTNER 2013
TOP 100 TRUCKER 2013
TOP 100 3PL PROVIDER 2013
SmartWay Transport Partner
Getting There With Cleaner Air
CHARLESTON • CHARLOTTE • FORT WORTH • INLAND EMPIRE • LOS ANGELES • MIAMI • NEW YORK/ NEW JERSEY • NORTHERN CA • SAVANNAH • SEATTLE • SHREVEPORT
Got 3PL challenges?
Get free expert solutions at inboundlogistics.com/3pl

NOTED

THE SUPPLY CHAIN IN BRIEF

UP THE CHAIN

Gene Seroka was named executive director of the Port of Los Angeles by Los Angeles Mayor Eric Garcetti. In his new position, Seroka is responsible for improving operational efficiencies and labor relations, and enhancing the port's international trade agenda.

GREEN SEEDS

Tampa Bay's **Port Manatee** now uses two diesel-electric locomotives to operate the short line railroad between the port and the CSX mainline. The new rail units are expected to reduce nitrous oxide emissions and particulate matter by 90 percent, and cut fuel costs up to 60 percent.

The U.S. Environmental Protection Agency named **DHL** a member of its **Green Power Leadership Club** for joining the agency's Green Power Partnership. DHL ranked among the agency's top green electric power users by purchasing renewable energy credits from wind farms to cover projected 2014 electricity use.

Pennsylvania Power and Light added **Kane Is Able** to its **E-Power Energy-Smart Business Honor Roll** after the 3PL modified its Scranton distribution center to save $15,230 in energy costs annually.

m&a

Echo Global Logistics, a third-party logistics provider, purchased transportation brokerage **One Stop Logistics.** The acquisition expands Echo's national coverage, carrier network, and service offering.

German container shipper **Hapag-Lloyd AG** signed a binding merger agreement with Chilean carrier **Compania Sud Americana de Vapores SA.** The combined companies will have a transport capacity of one million 20-foot containers aboard 200 ships.

◀ **FedEx Express** bought African courier **Supaswift**, giving the global carrier access to a regional ground network in South Africa, Botswana, Malawi, Mozambique, Namibia, Swaziland, and Zambia.

GOOD WORKS

Fleet Advantage, a provider of truck fleet business analytics and equipment financing, invested $80,000 to launch the **Kids Around the Corner** program, which supports children's charities in its clients' towns. The company will continue to contribute to the program by donating a percentage of its profits.

In conjunction with the Washington State Patrol, national truckload carrier **Gordon Trucking** operates 100 trailers for the Homeward Bound program. The trailers feature large photos of 21 missing children from Washington and Oregon.

UTi Worldwide held its annual DBL Global Walkathon, in which different global divisions within the company host events to raise money for UTi's charitable foundation, **Delivering Better Lives.** Proceeds from the 2014 fundraiser will be used to build a shelter for disadvantaged youth in Argentina.

SEALED DEALS

Zep Inc., a chemical producer, selected **Transplace's** Software-as-a-Service transportation management system to improve communication, and centralize supply chain operations. Zep used the solution to integrate several enterprise resource planning systems into one centralized model.

▶ **Honda** selected the **Port of Brunswick** as the U.S. point of entry for the 2015 Honda Fit, which is manufactured in Celaya, Mexico. The automaker previously used the port only for exports, but started importing vehicles via ocean as an alternative to cross-border rail.

The Consortium for Purchasing and Distribution, a supplier for the education, early childhood, and elder care industries, chose **HighJump Software's** warehouse management system to more accurately control picking, packing, and inventory; as well as improve workflow planning and order management at its distribution centers.

PECO Pallet became a provider for **Walmart Canada,** allowing vendors and manufacturers to use PECO's equipment when shipping product into any of Walmart's 390 Canadian locations.

recognition

Navistar and Women in Trucking named **Marcia G. Taylor**, president and CEO of transportation and logistics provider Bennett International Group, the **2014 Influential Woman in Trucking.** Taylor was chosen from four finalists for the award, which honors female leaders in trucking and encourages women to join the industry and pursue their goals.

PeopleNet was recognized as the **2014 North America Frost & Sullivan Company of the Year** for its high level of customer service, extensive partnership efforts and integration capabilities, and introduction of industry-specific product suites.

The **Maryland Port Administration** received the **Presidential "E Star" Award** from the U.S. Department of Commerce in recognition of the marked increase in exports through the Port of Baltimore in the past several years. This is the third time the organization received the award.

The American Chemistry Council recognized **Miller Transporters** with a **Responsible Care Partner of the Year** award, which it gives to companies that show leadership and continuous improvement in environmentalism, health, safety, and security.


LIFEGUARD

Committed to being green...
And to our customers!

We're committed to the environment, and helping to make it more sustainable is an inherent part of our company's philosophy. From innovative containers to equipment that requires less fuel and reduces harmful pollutants, we can save energy and make more efficient use of resources. We strive to operate in the most efficient manner with the highest regard for the health and safety of our employees and protecting the environment, as we deliver the highest quality service to our customers.

GREEN STAR
GREEN STAR AWARD

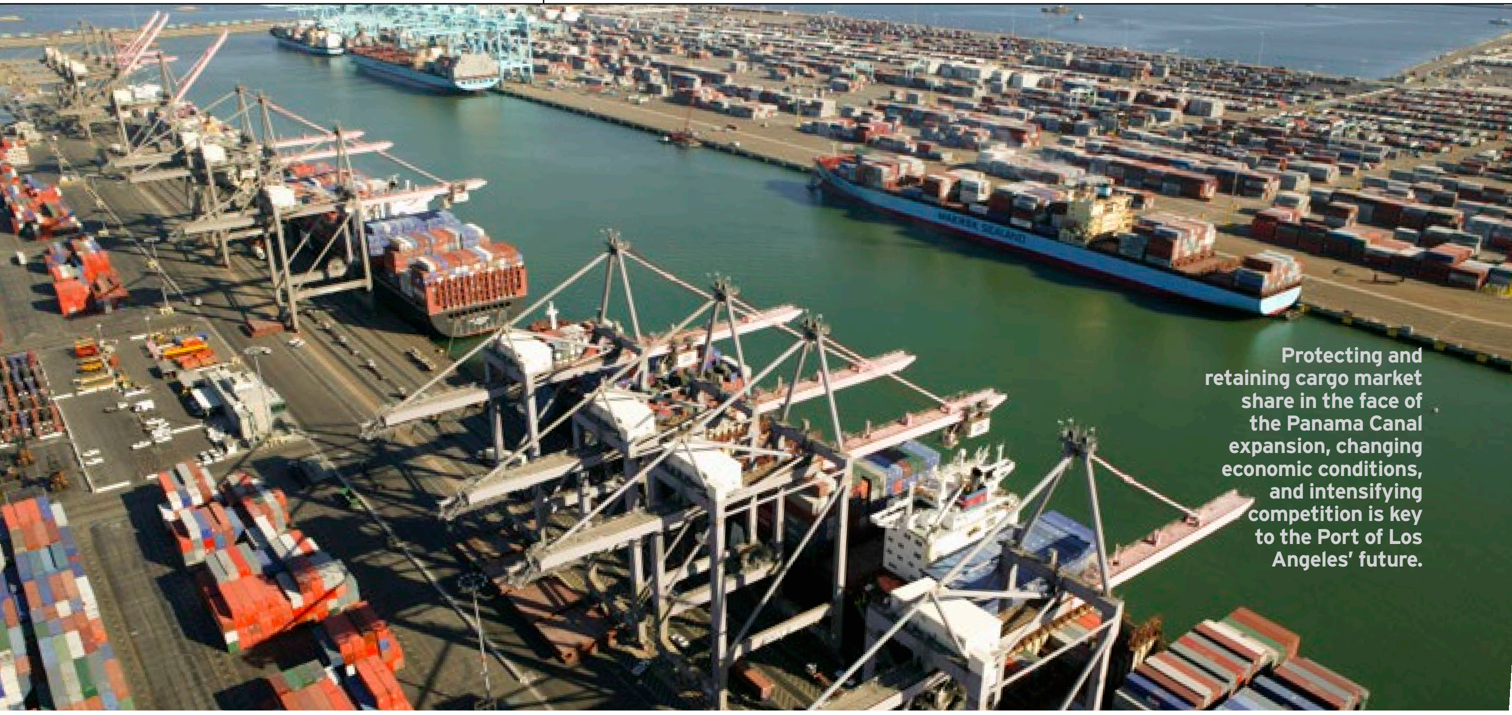
SmartWay℠ Transport Partner
Getting There With Cleaner Air

LYNDEN
Innovative Transportation Solutions

www.lynden.com 1-888-596-3361

TRENDS

SHAPING THE FUTURE OF LOGISTICS



Protecting and retaining cargo market share in the face of the Panama Canal expansion, changing economic conditions, and intensifying competition is key to the Port of Los Angeles' future.

Panama Canal Countdown: Port of Los Angeles Goes Big

by Joseph O'Reilly

With the completion of the Panama Canal project just around the corner, conjecture about how the expansion will affect shipping patterns continues. East Coast ports and players are bullish. Elsewhere, opinions are more muted.

The Panama Canal is making a loud impact, however, on the Port of Los Angeles, which expects to invest $3 billion in infrastructure enhancements over the next decade. Work includes deepening access channels, expanding marine terminals, and improving traffic flow through street and bridge improvements in the harbor area.

The port and U.S. Army Corps of Engineers recently proposed infrastructure improvements to the Yusen Container Terminal: increasing berth depths from 45 to 53 feet, accommodating 100-foot gauge gantry cranes, and expanding on-dock rail yard capacity. These improvements follow the port's $370-million Main Channel Deepening Project, which dredged waterways and turning basins to 53 feet.

Growing vessel sizes—some tipping 10,000 TEUs—require greater draughts, capacity, and throughput on and off port. But the Port of Los Angeles also faces stiffening competition.

"When shippers look at our facilities, they need to see we're top flight," explains Phillip Stanfield, spokesperson for the Port of Los Angeles. "The port is in the second year of a five-year $1.2-billion investment program, and is spending more than $1 million daily on infrastructure. These investments are in response to the Panama Canal, as well as competitive threats from Mexico, Canada, the Pacific Northwest, and the East Coast."

The port doesn't know how the Panama Canal will sway trade, nor will it speculate on percentages or numbers. Carrier rates are a key factor; so is speed to market. Los Angeles will always hold an advantage over East and Gulf Coast ports in that regard.

"The port's second-largest import is auto parts. It's critical those parts be delivered when expected so cars can be built," Stanfield tells *Inbound Logistics*. "When the Panama Canal widens, the port still beats the East Coast's speed by five or six days."

Amid capacity and asset utilization issues, steamship line schedule dependability has been trending downward. Los Angeles is still a direct line from Asia. Ports in the U.S. Pacific Northwest, Canada, and Mexico offer similar advantages. But what Los Angeles has is critical mass—and, increasingly, balance.

In 2010 and 2011, the port doubled its exports. Its Trade Connect program educates small businesses on how to export. Greater trade balance is attractive to carriers in all modes looking to utilize capacity efficiently, and eliminate costly deadheads.

Beyond that, the port's potential to quickly process larger ships is a major incentive. Much of the current and future investment is geared toward facilitating transshipment on and off port. Ocean carriers want to serve ports where they can deliver larger vessels. It's simply a matter of scale.

U.S. Manufacturing's Labor Pool Runs Dry

Cheaper energy. Chinese inflation. Growing environmental consciousness. A supply chain oriented C-level. These issues stoke optimism for a U.S. manufacturing renaissance. An ever-growing sample size suggests the total landed cost balance is tipping toward North America.

But one huge obstacle stands in the way. Years of manufacturing attrition created a generational talent gap. There's not enough skilled labor to accommodate new demand.

In fact, U.S. manufacturers may lose up to 11 percent of their earnings annually as a result of increased production costs stemming from a shortage of skilled workers, warns *Out of Inventory: Skills Shortage Threatens Growth for U.S. Manufacturing*, a recent study conducted by Accenture and The Manufacturing Institute.

Nearly 40 percent of the 300 U.S. manufacturing executives surveyed describe the shortage of qualified, skilled applicants as "severe," and 61 percent say it has been difficult to hire the skilled people they need. In addition, more than 50 percent of respondents plan to increase production by at least five percent in the next five years.

Furthermore, when manufacturers are unable to fill roles, overtime, downtime, and cycle times increase; more materials are lost to scrap; and quality suffers. Yet quality has always differentiated U.S. manufacturing.

"The skills shortage facing U.S. manufacturers is apparent from this report, and its severity can be measured in dollars," says Matt Reilly, senior managing director, Accenture Strategy, North America.

"U.S. manufacturers' plans to increase production and grow manufacturing roles over the next five years are positive indicators, but are likely to exacerbate the problem," Reilly says.

"Given today's limited pool of relevant talent, companies may have to forget the notion of the perfect candidate," he adds. "Instead, they should look for more generalist skills in candidates, and develop them to match the specific work that needs to be done."

Combating the Skills Shortage in U.S. Manufacturing

U.S. manufacturers may be risking up to 11 percent of earnings before interest, taxes, depreciation, and amortization annually as a result of a skilled workers shortage and increased production costs.

80% of executives report a moderate to severe shortage of highly skilled workers.

75% of executives report a moderate to severe shortage of skilled workers.

61% say it has been difficult to hire the skilled people they need.

Source: *Out of Inventory: Skills Shortage Threatens Growth for U.S. Manufacturing*, Accenture and The Manufacturing Institute

Drones on Ice

Speculation about using drones for delivery purposes continues to buzz with abandon. But until the Federal Aviation Administration has its say, that's merely a flight of fancy. Still, drones are popping up not just in airspace, but in the freight transportation space as well.

For example, Montreal-based Fednav, a dry-bulk transportation company, has been using unmanned air vehicles (UAVs) for ice reconnaissance on commercial sailings. Recently, the *Umiak I*, a Fednav icebreaker, used a variety of video-equipped drones to scout ahead of the vessel in the frozen waters off the Labrador Coast. The surveillance provided the captain and officers with detailed, real-time visual information on local ice conditions.

Enfotec, a Fednav subsidiary, provides ice imagery and analysis to vessels operating in difficult conditions. With recent advances in the quality of information derived from satellite and radar images, and conventional ice charts, this new method of ice detection immediately captures subtle ice features such as ridges, leads, and fractures. The UAVs deliver critical, high-quality, short-range visual observations allowing navigators to see beyond the normal horizon for strategic navigation.

"UAVs are proving beneficial in identifying many ice features that should be avoided ahead of the vessel, as well as identifying open water leads to improve voyage efficiency," says Thomas Paterson, senior vice president, Fednav. "In addition, the deployment of drones fit with top-quality cameras gives the ice navigator another useful aid when making important decisions while transiting heavy ice regimes, and, in turn, improved safe navigation." ■

The *Umiak I*, one of Fednav's most powerful icebreakers, employs drones to provide the crew with detailed real-time visual information on local ice conditions.

Apple Blossoms on Gartner's Top 25 Supply Chains List

Some familiar names top Gartner's 10th-annual list of the best supply chains. The top five organizations in 2014 include four that led the list last year – Apple, McDonald's, Amazon, and Unilever – plus another familiar leader, Procter & Gamble. Two new companies joined the Top 25 this year: Seagate Technology (No. 20) appears for the first time, and Kimberly-Clark (No. 21) re-emerges after a one-year hiatus.

Apple takes the top slot for the seventh year running, continuing to outpace all other companies by a wide margin on the composite of financial and opinion measures.

Gartner's selection criteria consist of three components: publicly available financial data, which is weighted at 50 percent; Gartner analyst voting; and a peer opinion panel.

"Every year we identify the companies that best exemplify the demand-driven ideal for today's supply chain and document their best practices, which can help all companies move closer to their demand-driven goals," explains the Stamford, Conn.-based consultancy.

Gartner's Top 25 Supply Chains:

1. **Apple**	13. **H&M**
2. **McDonald's**	14. **Walmart**
3. **Amazon**	15. **PepsiCo**
4. **Unilever**	16. **Lenovo Group**
5. **Procter & Gamble**	17. **Starbucks**
6. **Samsung Electronics**	18. **3M**
7. **Cisco Systems**	19. **Qualcomm**
8. **Intel**	20. **Seagate Technology**
9. **Colgate-Palmolive**	21. **Kimberly-Clark**
10. **The Coca Cola Co.**	22. **Johnson & Johnson**
11. **Inditex**	23. **Caterpillar**
12. **Nike**	24. **Cummins**
	25. **Nestlé**

GLOBAL

THE WORLD AT A GLANCE

by Joseph O'Reilly

Light at the End Of the Chunnel

UK and continental shippers can expect a price reprieve after Eurotunnel announced plans to reduce freight rates through the Channel tunnel. The move comes after the European Commission began legal action to reduce charges and increase traffic.

Paris-based Eurotunnel, which operates trains through the tunnel, will cut tariffs for off-peak services at night during the week, and reduce prices by one-third during tunnel maintenance.

The European Commission welcomed the decision to reduce track access charges by up to 50 percent, expecting it to double rail freight volume through the tunnel in the next five years.

"Because rail freight traffic through the Channel Tunnel has increased 10 percent in 2013, and 13 percent in the first quarter of 2014, we decided to reinforce our efforts to support the development of this traffic," says a statement from Eurotunnel.

In response, European Commission Vice President Siim Kallas says the decision "stands to unblock a major bottleneck in Europe's transport network," and is good news for business, consumers, and the environment.

When Continents Collide

If Turkey and China have their say, the world as we know it might be a train ticket away.

Turkey is doubling down on efforts to improve traffic flow between the European and Asian sides of Istanbul across the Bosphorus Strait, which separates the two continents. In October 2013, the government opened the long-awaited 8.5-mile Marmaray railway tunnel project, the first physical rail link between Asia and Europe. Now, excavation work for a $1.2-billion, 3.4-mile double-deck road tunnel is underway, following a similar course. When it opens in 2017, the new tunnel is expected to reduce current over-the-road travel time from 100 minutes to 15 minutes, while handling 120,000 vehicles per day and improving traffic flow.

Turkey's aspirations are becoming reality. China's recently announced plans, meanwhile, are a figment of fancy. The government is no stranger to big ideas—the country has proposed a $10-billion port in Tanzania, a $3.8-billion rail line between

(continued on page 26)

(continued from page 25)

Mombassa and Nairobi, Kenya (*see sidebar, right*), a dry canal in Colombia, and a wet one through Nicaragua.

But now China is upping the ante with the idea of building an 8,000-mile-long rail line that would link China, Russia, and Canada through Alaska.

Chinese officials are considering a route that would start in the country's northeast, thread through eastern Siberia, then shoot the Bering Strait via a 125-mile-long underwater tunnel into Alaska—more than four times the length of the Channel Tunnel connecting England to France, a *Beijing Times* report suggests. Similar rumors of a tunnel eventually connecting China to Taiwan are also circulating.

China to Upgrade East Africa Rail Network

China's stake in East Africa, and its wealth of natural resources, is assured. The government has signed off on a deal to build a $3.8-billion rail link between Kenya's Indian Ocean port of Mombasa and Nairobi, the first stage of a line that will eventually link Uganda, Rwanda, Burundi, and South Sudan. The government will cover 90 percent of the cost to replace the crumbling British colonial-era line with a 379-mile standard-gauge link; Kenya will be accountable for the remaining 10 percent. Construction is due to start in October 2014, and take 3.5 years to complete.

This deal follows China Merchants Holding International's plans to begin construction of a new port in Bagamoyo, Tanzania by 2015—with financing assistance from China. The total buildout of the port, rail network, and logistics facilities could surpass $10 billion.

Alaska is familiar with over-hyped infrastructure projects that inevitably lead to nowhere. China's bluster may be just that. But the country also has a track record of thinking and executing without reproach. Only time will tell.

Wealthy Economies to Enrich Global Trade in 2014

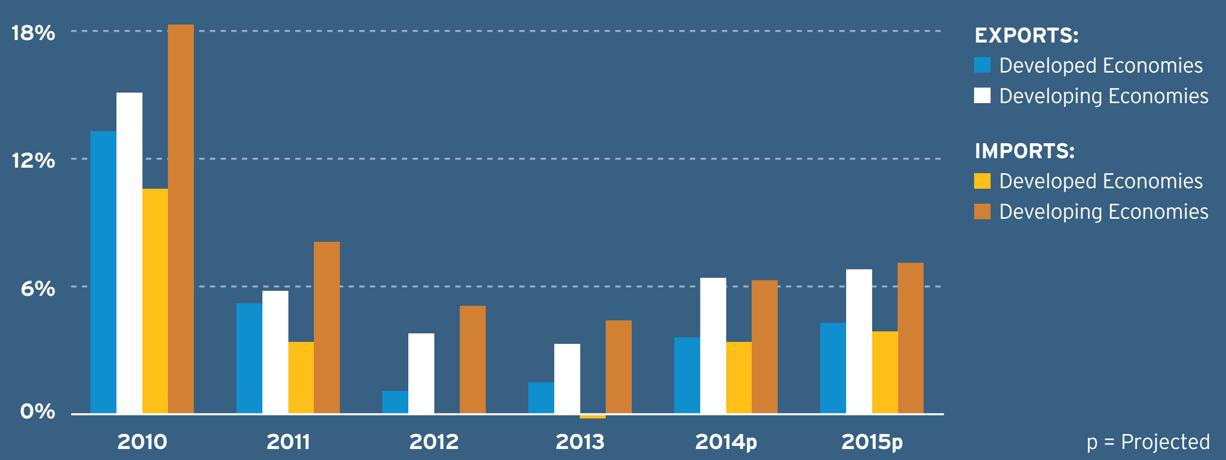
The World Trade Organization (WTO) recently adjusted its outlook for global trade, predicting that commerce will grow by 4.7 percent in 2014, adjusted up from its previous 4.5-percent forecast. Recovery in developed economies is expected to offset sluggish emerging nations. The WTO's newest assessment indicates worldwide trade will more than double 2013's 2.1-percent growth.

Asia will continue to drive growth rates even as China's expansion slows. The WTO expects Europe and North America's recoveries to drive both imports and exports.

If GDP forecasts hold true, the WTO projects a broad-based, but modest, upturn in 2014, and further consolidation of this growth in 2015.

World Merchandise Trade and GDP, 2010-2015 Annual % Change

World merchandise trade is expected to post a 4.7-percent increase in 2014, with developed economies growing 3.6 percent, and developing economies and the Commonwealth of Independent States advancing 6.4 percent.



Source: WTO Secretariat for Trade, GDP concensus estimates

Green Down Under

Trucks traversing Australia's red rock desert might soon find a green oasis. Germany-based PTV Group, a traffic consulting and software company, signed an agreement with Emisia S.A., a spin-off company of the Laboratory of Applied Thermodynamics at Aristotle University of Thessaloniki in Greece, to provide the first standardized emissions calculation methodology for vehicle routing and optimization solutions in Australia.

The two companies have developed COPERT Australia, a database specific to Australia's route network, which enables detailed calculation of CO_2 emissions for heavy-duty vehicles.

COPERT calculates greenhouse gas and air pollutant emissions from road transport, covering all important vehicle classes and driving conditions. It includes algorithms developed from data collected in Australian test programs designed to reflect the Australian fleet and activity data.

US Questions Russia's Trade Designation

Machinations in Washington could withdraw Russia's designation as a beneficiary developing country under the Generalized System of Preferences (GSP), suggests a recent report by international trade services provider Sandler, Travis & Rosenberg. The GSP program promotes economic growth in the developing world by providing preferential, duty-free entry for up to 5,000 products when imported from one of 123 designated beneficiary countries and territories.

Influenced by current events in Ukraine, and the threat of economic sanctions, the Obama administration says Russia has developed its economy, and improved trade competitiveness to the point where it no longer warrants special consideration. Both the European Union and Canada have made similar motions, according to the report.

The primary criterion for such changes is typically a country's designation as "high-income" by the World Bank, which put Russia in that category in its 2014 *World Development Indicators* report.

While the administration mulls its options, revoking Russia's GSP benefits will have no immediate effect. The program remains suspended after Congress failed to reauthorize it in 2013, so goods from Russia, as well as all other beneficiaries, are already subject to normal tariffs when imported into the United States. If the GSP is reinstated as expected in 2014, however, Russian goods would then be at a disadvantage in the U.S. market.

The Sandler, Travis & Rosenberg trade report posits another consideration that may force Washington's hand. The U.S. business community is pressuring the Obama administration to reinstate GSP, claiming domestic manufacturers have lost sales and laid off workers because they have been paying an extra $2 million daily in tariffs on imports that cannot be sourced domestically.

Lawmakers cite the fact that Russia is currently a GSP beneficiary as one factor standing in the way of a reauthorization. Once that is no longer the case, members of Congress could find it politically easier to renew the program.

Port Metro Vancouver on Right Track

The nearly two-month labor standoff at Port Metro Vancouver that ended in late March 2014 might have a silver lining for all players involved. One complaint raised by striking truckers was the lengthy, non-productive waiting times they had to deal with on terminal.

To alleviate that problem, the port recently announced it would spend $1.7 million to expedite and expand its truck GPS program in 2014. In 2012 and 2013, GPS units had already been installed in half the container trucks operating under the port's truck licensing system.

By having a better grasp on the location of its container trucks, the port hopes to reduce congestion and driver wait times. [ ]

French Fry M&A Activity

French protectionism is alive and well. The government has issued a decree allowing it to block any foreign takeovers of French companies in strategic industries, according to a Reuters report. The gambit puts a hold on General Electric's expected $16.9-billion bid for high-speed train builder Alstom's energy assets.

The new order gives the state even more power to block foreign takeovers in the energy, water, transport, telecom, and health sectors. Acquisitions will now require approval from the Economy Minister.

Many would prefer that French-owned Alstom seek an alliance with another European engineering company–notably Siemens. But the effort is likely to give foreign investors further pause as they look to make inroads in certain markets.

Supporters suggest the decree merely enables the government to ensure certain industries are protected, and that it's no different than powers afforded other European countries and the United States.

GE has offered about $16.9 billion to acquire all of Alstom's energy business.


WERNER
est: 1956
Origin:
SHANGHAI, CHINA
Origin:
NASHVILLE, TN
Origin: SAN JOSE, CA
Origin:
PERTH, AUSTRALIA
WERNER
DELIVERING THE SIMPLE THINGS THAT MAKE LIFE BETTER.
WERNER.COM | 800.228.2240

LOGISTICS knowledgebase©

Richard Erickson, Global Director of Freight Payment Solutions,
U.S. Bank Corporate Payment Systems, in collaboration with Jane Malin,
Owner and Executive Consultant, Bridge Consulting
866-274-5898 • intouchwithus@usbank.com

Best-in-Class Supply Chains Won't Overlook Freight Payment

As a shipping professional, you play an important role in your company's physical supply chain. But did you know your role is just as important to your company's financial supply chain?

In today's global supply chains, encompassing multiple transportation and financial partners, all stakeholders need visibility into transactions, parameters and results of the financial supply chain. This is particularly germane when looking at logistics, freight and freight spend. By delivering faster end-to-end cash flow and seamless transactions, you can improve your organization's working capital, reduce risk, and enhance margins and efficiencies.

Getting a balanced view of overall freight payments can improve two critical supply chain measures: Cash-to-Cash Cycle Time and Perfect Order Fulfilment. They demonstrate how well supply chain goals are met, and how freight payment factors into the equation.

Cash-to-Cash Cycle Time: Internal Measure

The Supply Chain Council (SCC) defines Cash-to-Cash (C2C) Cycle Time as the time it takes for an investment to flow back into the company after it has been spent.

INVENTORY DAYS OF SUPPLY + DAYS SALES OUTSTANDING − DAYS PAYABLE OUTSTANDING = **C2C CYCLE TIME**

High-performing supply chains minimize the number of days between when suppliers are paid (cash out) and when payment is received from customers (cash in).

The bottom line: The shorter the C2C cycle, the more cash is accessible, and the more net working capital is available for investment. In today's business environment, it is critical to keep working capital healthy and flowing smoothly. This includes transportation spend.

Perfect Order Fulfillment > Customer-Focused Measure

The SCC defines Perfect Order Fulfillment (POF) as the percentage of orders meeting flawless delivery performance and product quality, with complete and accurate documentation and no delivery damage.

POF is a binary decision; it's either perfect or it's not. It is achieved if order fulfillment, delivery, documentation and quality are perfect, period. This perfection inherently extends to all documentation and transactions within the financial supply chain as well: order pricing, order confirmations, invoices, cash application, freight invoices, letters of credit, export documentation, etc.

TOTAL PERFECT ORDERS ÷ TOTAL NUMBER OF ORDERS × 100% = **POF**

An important piece of POF – one that has been underappreciated for too long – is making sure the delivery is perfect: on time, shipped with the right carrier, charged at the right amount and paid correctly.

Putting It All Together

C2C and POF measurements show the importance of looking at the supply chain as a whole – physical and financial. An electronic freight payment system provides direct support in improving C2C and POF measurements by organizing and providing clarity to the freight aspects of sourcing and acquisition, as well as distribution.

- **Improving C2C.** A freight payment program with a trade finance feature lengthens your payment terms with freight carriers, without renegotiating contracts. Trade finance allows carriers to be paid according to their original terms while you pay later. When Net 30 becomes Net 60 or greater, imagine how that positively impacts your C2C cycle.
- **Improving POF.** An electronic freight payment solution speaks to the delivery portion of the quest for POF, providing granularity into tracking the time and accuracy elements of freight payment, invoicing and cash application steps in the order process.

A best-in-class financial supply chain has best-in-class freight audit and payment to provide the visibility and control needed to meet the complex challenges of managing global freight spend. When you add trade finance to optimize working capital, the result is an end-to-end freight payment solution that strengthens your financial and physical supply chains.

To further explore the impact of transportation costs on critical supply chain measures, download *Freight Payment: The Final Link in End-to-End Supply Chain Visibility*: www.usbpayment.com/freight-payment.

Skill is moving inventory from here to there.
Will is caring about your business enough to improve your bottom line.
Skill is flawlessly solving a client's problem.
Will is doing it before they ask.
Skill is knowing how to fix a truck.
Will is doing it on a holiday. In an ice storm.
Skill is expediting a shipment.
Will is getting it to a secret government location.
Skill is moving a family.
Will is helping them start a new life.
Skill is what makes us a great shipping and logistics company.
Will is what makes us ArcBest Corporation.SM
THE SKILL & THE WILL SM
ABF
ABF Freight
ABF Logistics
Panther Premium Logistics
FleetNet America
U-Pack We Drive. You Save.
ArcBest Corporation
© 2014 ArcBest Corporation. All rights reserved. All service marks featured in this advertisement are the property of ArcBest Corporation and its subsidiaries.
arcb.com

THE LEAN SUPPLY CHAIN

BY PAUL A. MYERSON
Professor of Practice in Supply Chain Management at Lehigh University
and author of several books on Lean for McGraw-Hill
pmyerson@lehigh.edu | 610-758-1576

Lean Retail: It's About Time–and Money

Thanks to forward-thinking retailers such as Walmart and OfficeMax, Lean thinking is spreading in a variety of manufacturing sectors, including consumer goods, apparel, and food and beverage. These retailers have dramatically changed how products are ordered, moving inventory rapidly through their distribution centers to stores by gathering and sharing point-of-sale data with suppliers, and using bar codes to manage and accelerate product flow.

Although this revolution has been occurring in manufacturing, and for a select few large retailers, most retailers and wholesalers have implemented Lean concepts only minimally–if at all. And most of those activities have focused on suppliers upstream, rather than on identifying what adds value for customers.

Lean opportunities for retailers and wholesalers fall into three primary categories:

1. Retail strategy. For Lean to be successful in a retail or wholesale organization, departmental strategies must align with and support a company-wide Lean strategy.

2. Merchandise management. This involves developing, securing, pricing, supporting, and communicating the retailer's merchandise offering. Ultimately, it means having the right product at the right price and the right time. Failing to manage merchandise using Lean principles creates a great deal of waste–which doesn't add value for anyone.

3. Store and distribution operations. This is the greatest area of waste–and therefore the greatest opportunity to apply Lean principles. Distribution is all about optimizing the trade-offs between handling costs and warehousing costs, and maximizing the warehouse's total cube–utilizing its full volume, while maintaining low materials handling costs and minimizing travel time.

More in Store

When seeking Lean improvements in the retail environment, it helps to consider store operations and process improvement from the customers' viewpoint as they make their way through the store. Many companies find analyzing in-store logistics beneficial when it comes to Lean–especially the "last 10 yards" of the supply chain, which encompasses the store's materials receiving process through product selection by the consumer. Much can go wrong during that time from an employee productivity and quality standpoint, and, as a result, many opportunities exist to improve processes and increase profits.

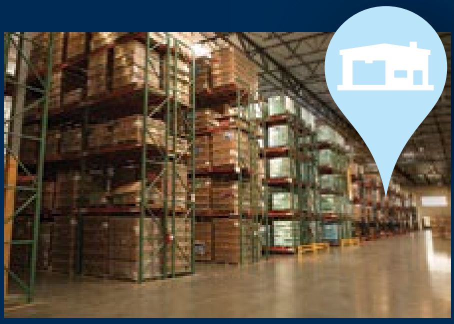
Adding to the complexity of retailer supply chain and operations management is the emergence of multi-channel marketing, which uses brick-and-mortar, online, mobile, and mobile app stores; and catalog, television, radio, direct mail, and telephone sales to reach the customer. The forms of transactions that result can include browsing, buying, returning, and pre- and post-sale service.

Omni-channel marketing, an even newer concept, is a natural evolution of multi-channel retailing that tries to integrate the consumer experience via all available shopping channels.

Lean thinking is all about identifying and eliminating waste from the viewpoint of the consumer. In these tough economic times, it makes sense to apply these concepts and tools in the retail and wholesale environment, which is as close to the final customer as you can get. ■

Parts of this column are adapted from *Lean Supply Chain & Logistics Management* (McGraw-Hill; 2012) and *Lean Retail and Wholesale* (McGraw-Hill; 2014) by Paul A. Myerson with permission from McGraw-Hill.


8572662
Natural Gas
Operated By
NFI Transportation
NFI
Vineland, NJ
GVWR 80,000




NFI
RoadRail


CMA CGM

3PL LINE

BY BRIAN SMITH
CEO, Wagner Logistics
brian.smith@wagnerlogistics.com | 800-817-1264

Need Warehouse Capacity? Outsourcing Gives You an In

To find the right solutions to today's complex warehousing, real estate, and supply chain challenges, growing companies have three options: hire someone with the expertise you need; train someone on your staff; or enlist help from someone outside your company who already has the skills you need.

Shippers should consider seeking that outside help from a third-party logistics (3PL) provider—but only one that demonstrates the ability to truly understand your unique needs. To develop strategic solutions, 3PLs need to be subject matter experts in multiple areas. They must understand elements of the marketplace shippers don't have the resources or time to focus on.

For example, one critical area of expertise should be a deep understanding of the real estate market. In the past, a company could lay out its needs for a warehouse broker, then practically dictate both terms and price.

Those days are over. A significant tightening of industrial space is partly to blame. Think back to the financial calamity of 2008 and 2009, when real estate developers basically stopped building.

Now, fast forward to the present, as the economy continues its slow recovery. Businesses need facilities, but new development has been slow to start, causing an extreme lack of available space in some markets, especially areas such as Dallas and Kansas City.

In other cases, physical space may be available, but unsuitable for shippers' needs. It could take the industrial real estate market several years to catch up with demand, and build the right kind of warehouse space that will allow rents to stabilize.

Looking High and Low

Warehouse vacancy has declined for 14 consecutive quarters, after peaking in the first quarter of 2010. Consequently, rental rates are trending up. The U.S. direct weighted average triple-net rental rate is $5.73 today, up from $5.59 in 2012, according to commercial real estate broker Cushman and Wakefield.

While rents remain well below prior highs, they probably won't stay that way for long. Some studies forecast rents will rise as much as 25 percent during the next three years. Select markets such as Southern California and Houston are rapidly approaching all-time high rates.

These factors suggest companies seeking logistics space face a relatively inflexible market. Businesses are increasingly forced to accept more risks, such as signing longer-term leases—even if their line of business dictates they won't need the space for the full term.

Outsourcing logistics can benefit shippers because 3PLs can help balance needs among companies that work in different industries, but face similar challenges. Consider a business that experiences its peak season during the winter holidays. The company spends the first six months of the year building inventory, but doesn't need warehousing space until June.

A 3PL could match that business with a company that produces charcoal for the outdoor grilling season. For the first six months of the year, charcoal replaces holiday seasonal items on the warehouse shelves—a perfect solution that allows both companies to save significantly on warehousing costs.

Making such connections would be difficult without 3PL assistance—the odds of two companies independently knowing about each other's needs are slim. But the odds are good that consulting a 3PL about your warehousing needs can create a beneficial relationship. ■

VIEWPOINT

BY MICHELLE COMERFORD
Project Director/Industrial & Supply Chain Practice Leader,
Biggins Lacy Shapiro & Co.
mcomerford@blsstrategies.com | 216-973-8872

5 Issues to Consider Before Selecting Your Next Site

For companies evaluating prospective manufacturing sites, transportation cost and service considerations are paramount. Here are five critical supply chain issues businesses must consider when evaluating sites for expansion or relocation.

1. Fuel costs. The price of U.S. diesel fuel has remained higher than $3 per gallon for more than three years, with no sign of dropping. The resulting increases in motor freight rates have prompted many businesses to consider operating more, smaller distribution centers closer to customers, as well as investigate alternative transport modes that may prove more economical.

For example, U.S. freight rail rates are nearly half what they were 30 years ago, according to the Association of American Railroads. This cost reduction helped increase rail usage across domestic and import/export transportation lanes.

Home goods retailer The Container Store transitioned to all-rail service in 2012, which reduced transportation costs by more than 20 percent. Now, when the company opens a new store, it looks for rail access to service the operation.

2. Driver and equipment shortages. The trucking industry's driver and equipment shortage sometimes translates to higher prices, particularly for specialty equipment such as tankers and refrigerated trailers. This shortage is also driving companies to seek properties with rail access, or in close proximity to intermodal facilities.

3. Proximity to customer base. Original equipment manufacturers, and manufacturers serving large retailers, can reap big rewards when they locate near clients. At the same time, some suppliers are striving to diversify their customer base – meaning they require a location that allows them to serve multiple customers effectively at the same time.

For example, G&B Global, an automotive supplier based in Michigan, moved its manufacturing operation to Alabama in 2012 after the recession sent many Michigan plants into closure.

The move not only allowed the company to serve automotive plants in the Southeast, but also enabled it to become a supplier to the region's aerospace industry.

4. New product development. With the ability to capture consumer data and track products faster than ever, companies are able to respond to demand sooner with new, improved products.

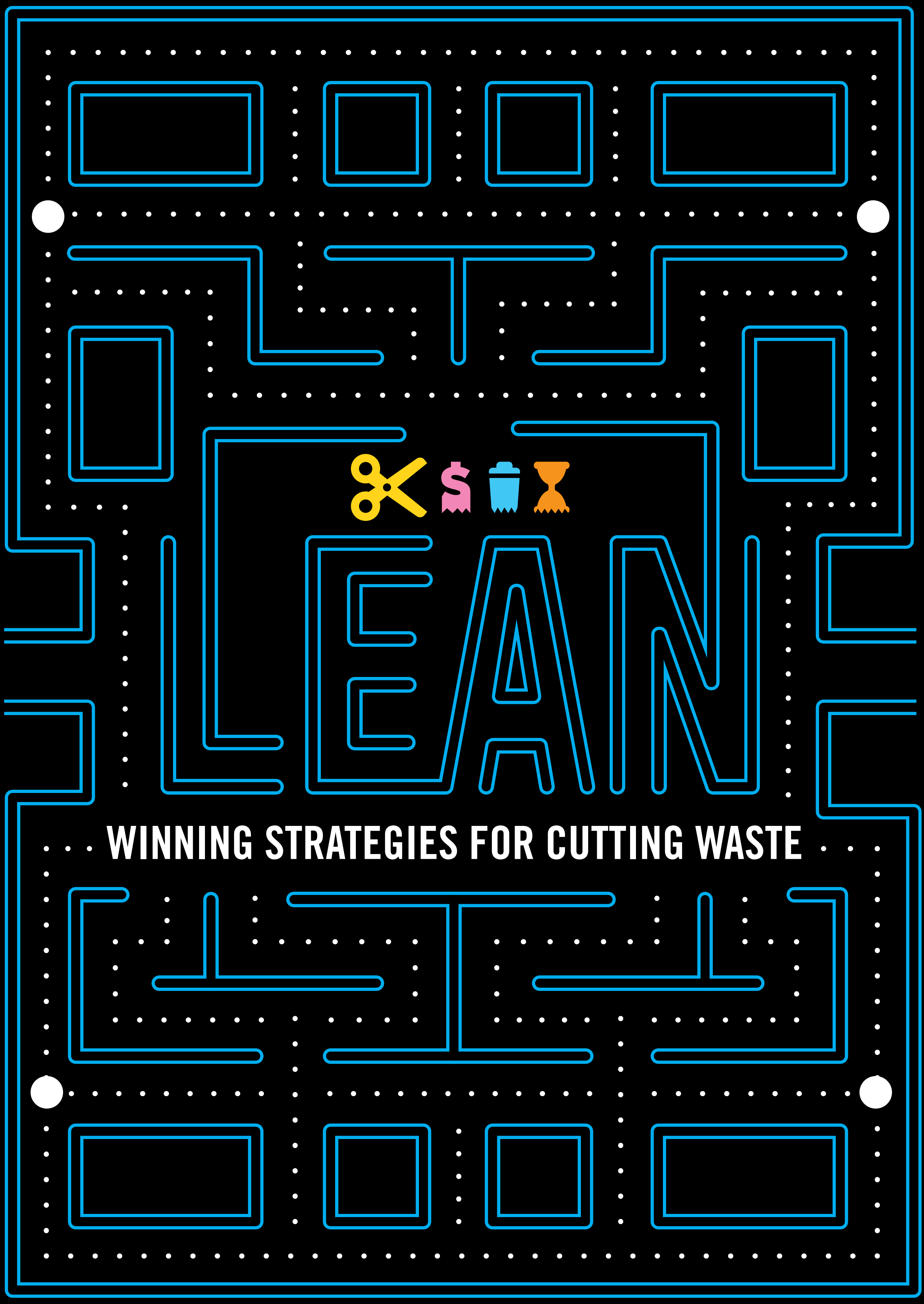
In addition, businesses are increasingly able to segment their products by region, producing only those items in demand in each area. In some cases, this is driving manufacturers to consider smaller, regional manufacturing operations.

5. Sustainability. Whether driven by customer requirements or corporate sustainability goals, the push to reduce carbon emissions is prompting companies to re-route or tighten routes to cut overall truck mileage.

Tyson Foods worked to reduce greenhouse gas emissions by cutting transportation miles, increasing rail usage, and shipping direct to customers instead of through distribution centers. The company eliminated more than 64 million over-the-road miles in 2012, and closed DC facilities, which allowed for even more operational savings.

Finding the Right Fit

There is no one-size-fits-all supply chain strategy for companies seeking a new location. But transportation considerations will remain at the forefront for manufacturing and distribution operations into the future. ■



LEAN
WINNING STRATEGIES FOR CUTTING WASTE

With Lean tools and processes at your command, you're well on your way to gobbling waste from your supply chain operations. Wakka wakka!

By Suzanne Heyn

Imagine a supply chain working in absolute harmony, with the perfect amount of raw materials arriving on the factory floor just in time to make the exact number of products needed to meet customer demand. Finished materials are then swiftly transported to their final destinations without wasted time spent idling along the way.

Engaged employees oversee the entire process, eyes peeled for inefficiencies needing to be addressed, because continuous improvement—as opposed to one-time process changes—is integral to Lean success. If workers spot any waste, they chase it down and obliterate it.

This ideal scenario may be difficult to achieve, but companies operating by Lean principles work toward it daily. Lean's roots lie in manufacturing, with Toyota pioneering the idea in the 1950s. The philosophy has spread into supply chain management, transforming companies along the way. The changes often result in smaller batch sizes, more communication internally and with suppliers, and increased adaptability to market conditions.

"Lean is all about eliminating waste," says Eric Lail, vice president of client services and continuous improvement for Transportation Insight, a third-party logistics (3PL) provider based in Hickory, N.C. Specifically, Lean highlights seven areas of waste—defects, overproduction, transportation, waiting, inventory, motion, and processing.

Consider Rotary Corporation, a Glennville, Ga.-based manufacturer and distributor of outdoor power equipment components that sought Transportation Insight's help to trim excess. The company adopted Lean principles, changed its manufacturing process, and reduced lead times by 60 percent, among other improvements.

The change was initiated after Rotary's leadership completed a value stream map, a flow chart frequently used in Lean to visualize a company's processes and identify inefficiencies.

The map uncovered significant time wastes in the company's batch processing, which delayed quality control until the end of each process, leaving workers to sift through entire batches while checking for defects. Rotary switched to one-piece flow, allowing workers to catch defects much sooner, and reducing rework.

To sustain its efforts, Rotary hired Lean coordinators to oversee distribution and manufacturing. The positions are integral for continued success. "Once the value stream map is completed, it becomes the improvement plan; it's just a question of how deeply to dig into each process," says Donald Fountain, vice president of operations for Rotary.

CARMAKERS DRIVE LEAN SUCCESS

Lean's main philosophy guiding process change involves just-in-time operations—making only the type of product needed at the time it's needed, in the amount needed.

The automotive industry perfected these ideals with its just-in-sequence system, says Michel Baudin, a Palo Alto, Calif.-based Lean consultant and author. If Toyota needs a white Corolla with beige seats, for example, it begins building the car and, at the same time, notifies its supplier of the need for beige seats in, say, 220 minutes. The seat supplier starts making the seats, then delivers them to the Toyota plant precisely when they're needed for installation.

Although this method works exceptionally well in the automotive industry, others could also apply it, Baudin says. Achieving such seamless production requires coordinating with suppliers, treating them as partners, and sharing as much information as possible.

"This kind of collaboration implies mutual commitment," Baudin says. Companies that attempt to strong-arm suppliers into making changes will likely be disappointed. Instead, Baudin recommends approaching the partnership as a long-term business relationship, talking to vendors about why changes are necessary, and showing them alterations the company has made internally.

"When you want to work upward in the supply chain, you need some significant achievements of your own," Baudin says. "Otherwise, you can't demonstrate your commitment."

Adopting Lean principles and streamlining production processes helped outdoor power equipment components manufacturer Rotary Corporation cut lead times by 60 percent.

Despite Lean's focus on producing what is needed at any given time, forecasting is integral to reaching that ideal. "Some analysts say Lean does not involve forecasting, but that's untrue," Baudin says. "It involves different levels of forecasting. The question is what decisions you make with that data."

Products might not be manufactured on medium-range forecasts, but companies should give suppliers all the information they have, Baudin says. That way, for example, if business expands, suppliers can adjust shift patterns, hire more people, or buy additional raw materials.

"Gradually, as the term draws near, forecasts become more specific," Baudin adds, with production beginning as late as possible to reach the just-in-time ideal.

Properly zoning and slotting incoming items for storage and retrieval inside a plant is another important factor in efficient manufacturing. Baudin advocates categorizing materials into one of three categories—runners, repeaters, and strangers—before assigning storage locations.

Runners are items used so frequently that products can't be built without them. They are a warehouse's permanent residents, and occupy dedicated, easily accessible spaces close to production.

Repeaters are like hotel guests—welcomed regularly enough to be managed on a replenishment basis, and given accommodations in the warehouse, but not the same space every time.

Strangers are items that show up occasionally for special orders. They visit the warehouse sporadically, and are not assigned special spaces.

For a plastics company Baudin worked with, repeaters included pellets and resins. As the company's team walked through the manufacturing process, they realized these key components were stored in hard-to-reach upper shelves on a pallet rack, while the bottom level was full of brooms and other cleaning equipment not central to production.

Each time the manufacturing line needed replenishing, a specially trained worker had to use a forklift to move the pellets and resins down to the lower level. By permanently moving the raw materials to the lower level, production operators could move the materials with an ordinary pallet jack.

"It was a simple solution," Baudin says.

For the plastics company, changing material locations made a difference in other ways. The company had a rule: receive all materials on one side of the facility, and ship from the other side.

In addition to selling items produced in-house, the company also sold finished products manufactured by other companies. The blanket in-one-end, out-the-other rule resulted in finished products dropped off on the receiving end, unnecessarily moved by workers through the facility, and delivered to the shipping side.

To make the process more efficient, the company changed its rules so finished products were delivered on the outbound side of the facility.

Efficient process flows are important for creating Lean warehouses. At Rotary Corporation, changing the path pickers took through the warehouse ultimately boosted productivity by 33 percent. To evaluate the flow, managers used a spaghetti diagram to analyze the existing path and the proposed new one.

"Imagine how spaghetti looks on a plate," says Lail, the company's consultant, referring to a diagram that uses lines to represent worker movements through the warehouse. Once managers understood the paths taken, they began to identify a more efficient route.

TRIED AND TESTED

To compare the existing route to the proposed one, managers followed pickers through the warehouse, timing them. Then, management showed the data to the pickers, demonstrating how much time the new path saved. "If we explain the reasoning behind our decisions, we get greater employee buy-in," says Ric Schreihofer, Lean manufacturing coordinator at Duramatic, Rotary's manufacturing arm.

Other Lean warehousing solutions involve ensuring space is used as efficiently as possible. Rotary, for example, held a kaizen event in its packaging area. A Lean tool that promotes continuous improvement, kaizen events are designed to evaluate a specific issue and find a solution.

During Rotary's packaging kaizen event, managers asked workers if they used the objects stored in a particular area, only to find out the items hadn't been used in years.

"I assumed employees were using them," admits Josh Powell, distribution Lean coordinator for Rotary. Even though he walked by that area every day, he did not question the items because they were ingrained in the routine.

By reorganizing tables and shelving, the company freed 3,200 square feet, creating an area for staging materials and completing other, more valuable tasks.

Lean initiatives frequently involve reduction—saving time and resources—but the philosophy ultimately promotes growth. "Lean is about freeing up resources so you can do more with what you have," Lail says. "Lean tools and systems represent about 30 percent of a successful Lean operation. The other 70 percent is culture."

To sustain all its Lean improvements, Rotary implemented monthly evaluations for each shift and department to review safety, quality, delivery time, and cost. The evaluations are part of a special Lean support method called 5S: Sort, Straighten, Shine, Standardize, and Sustain.

Sort requires that only items currently needed for production be located in the workspace. Straighten posits that all items should be labeled and easily accessible, while Shine dictates that all items and areas be clean. Standardize encourages companies to establish protocols, while Sustain recognizes that steps must be taken to ensure improvements stick.

"Many companies don't realize what an opportunity they have to improve processes, because they run the same business every day," says Steve Hopper, a Lean consultant in Atlanta.

Standardizing flow and labor procedures is critical to a Lean operation. Companies can increase productivity by up to 20 percent through adopting labor standards, Hopper says. Labor, along with inventory, are the biggest cost drivers in warehousing. The two areas must work in concert to reap the benefits of Lean, he adds.

Warehouse managers sometimes don't have control over key factors, such as the amount of inventory they must store. "Look at what you can control," Hopper says, such as efficient ways of managing the inventory on hand, and the labor used to receive and pick it.

"Optimizing inventory often means aligning with other areas of the organization," he notes.

For example, a consumer electronics company Hopper worked with wanted to build a new distribution center because its existing facility had reached capacity. "In one area of the facility, multiple aisles were stocked with the same widescreen TV," Hopper says. "I asked why they were keeping so much product there."

The company told Hopper the TV purchase was an opportunity buy—a chance to acquire a large quantity of product at a discounted rate. "We have to store the product until we're ready to sell it," the company told Hopper. Companies can avoid this type of scenario by establishing methods for different divisions to communicate.

In this case, the conversation would have revealed the impact of the opportunity buy—maxing out warehouse capacity—and led to an informed discussion about its true cost. "If the distribution and buying organizations aren't in synch, they sometimes make the wrong decisions," Hopper says.

SMOOTHER SAILING WITH LEAN

Hopper also cites a cruise line that was experiencing capacity issues in its receiving area. About 40 percent of the month's total inventory receipts were arriving in the same week. Looking deeper, the company discovered that the first week of each month bore the brunt of capacity issues because the budget for each department—hotel, entertainment, and food and beverage—operated on the same schedule, resulting in synchronized buying times. "The divisions were siloed," Hopper says. "No one talked to each other."

By staggering buying times for each department, the cruise line leveled out its receipts, and avoided maxing out receiving capacity.

7 WASTES OF LEAN

To remember the seven wastes of Lean, which are at the root of all unprofitable activity within your organization, use the acronym DOTWIMP.

1. Defects
2. Overproduction
3. Transportation
4. Waiting
5. Inventory
6. Motion
7. Processing

Calculating how much inventory or material to purchase is also key to Lean operations. One Lean approach is kanban—a stock replenishment method inspired by supermarkets, and first used by Toyota in manufacturing. Kanban involves buying and storing only what companies believe will sell.

An equation for calculating reorder times involves multiplying lead time by usage, then adding the safety factor. This method works particularly well for companies with a wide variety of merchandise and lead times, Lail says.

Consider bread in a home pantry. Count how much bread is typically consumed in one week—perhaps one loaf. The lead time would be the amount of time it takes to replace the loaf of bread—in this case, the number of minutes needed to drive to the store, purchase a new loaf, and drive home.

The safety factor, a measure of reliability, is designed to insulate replenishment from customers' varying order patterns. So, someone might purchase a new loaf of bread when two slices are left in the pantry to ensure the product is replenished in time.

To create a trigger for replenishment, a company might create a card with two slices of bread pictured, and incorporate the simple reminder into the standards of operation contained in its 5S program. "This approach involves applying the principles in a simple way so the user knows exactly what to do," Lail says.

Kanban helps companies trim the quantities it purchases while avoiding the worry of running out. To avoid waste, companies employing Lean principles typically buy fewer products and materials. "Lean principles connect companies to customer demand as closely as possible to eliminate the waste of inventory," says Robert Martichenko, chief executive officer of LeanCor, a Florence, Ky.-based 3PL.

In addition to quantity, purchasing decisions should consider total logistics costs – such as transportation—not just unit cost, Martichenko adds. Despite a global

5S PILLARS OF LEAN

In a company's daily work, routines that maintain organization and orderliness are essential to a smooth and efficient activity flow. The 5S Lean method encourages workers to improve working conditions, and helps them learn to reduce waste, unplanned downtime, and in-process inventory.

A typical 5S implementation significantly reduces the square footage of space needed for existing operations. It also organizes tools and materials into labeled and color-coded storage locations, as well as "kits" that contain just what is needed to perform a task. 5S provides the foundation on which other Lean methods can be introduced.

Here are the elements of the 5S method:

SORT: Remove all items not needed for the current production operation.

STRAIGHTEN: Arrange items so they are accessible and clearly labeled.

SHINE: Clean and tidy the work area.

STANDARDIZE: Define the normal condition of the workspace.

SUSTAIN: Ensure the improvements are continually carried out.

Determining the most efficient locations and handling processes for warehouse inventory plays an integral role in establishing a Lean supply chain.

economy that has for decades led companies to purchase materials and labor in lower-cost countries, Lean principles encourage companies to evaluate their supply chain in totality.

Although materials may cost less in another country, the expense of shipping them, in addition to the lead time added by waiting for goods to arrive, must be considered to make the best decisions.

"If a company is going to sell to the Chinese market, it should build in China," Martichenko says. If companies applying Lean principles plan to sell in the United States, they should build and acquire materials domestically for maximum efficiency.

Transportation marks another area that requires a broader view for companies wanting to adopt Lean principles. "There's a misconception that transportation companies are a commodity. That's not true," Martichenko says. "The real measure of a trucking company is executing the plan." That means arriving at promised times, offering robust shipment tracking, and providing notice about transit interruptions.

"The strategy of beating up transportation providers to get lower rates doesn't work long-term," Martichenko says. Instead, Lean values solid, long-term partnerships with providers, including carriers.

Electronics distributor and logistics provider Avnet focuses on daily quick wins and periodic overhauls to continually improve its Lean warehousing operations.

IRONING OUT THE OVERLAP

Increasing demands on transportation, such as driver and capacity shortages, make good planning even more critical. Establishing dedicated routes, as opposed to random schedules, supports Lean transportation goals.

With materials moving all over the world, arriving to and departing from distribution centers and factories, companies in search of a Lean supply chain should recognize the abundant waste that occurs where supply chain functions overlap. "Waste doesn't necessarily exist inside each function; it exists at the interfaces," Martichenko says. "Variability breeds inefficiency."

Some companies find integrated software systems help manage overlapping areas of the supply chain. "Every handoff has the potential to be a fumble," says Adam Kline, director of product management for Manhattan Associates, an Atlanta-based supply chain software company. "Every time one system hands off to another system, information may be lost."

One beverage manufacturer that Manhattan Associates worked with adopted a seamless technology platform linking its transportation, warehousing, labor, and yard management systems. In practice, before a trailer even enters the yard, algorithms have pre-selected the orders the truck will carry away.

The algorithm considers factors including order profile, trailer capacity, origin and destination pair, along with opportunities for consolidation. The factors are evaluated against the goals of reducing mileage and limiting fuel costs.

Once the trailer enters the yard, the warehouse management system alerts workers, who begin picking the appropriate orders. "The outbound pallets merge with the trailer at the door, enabling a just-in-time, fluid loading process," Kline says. "Workers don't have to pick up a walkie-talkie. The process is system-driven within the Manhattan Associates application through data sharing."

Because the sheer act of transporting goods is considered a waste in Lean, "anything that reduces transportation costs ultimately makes the supply chain more lean," Kline says.

Technology can make processes more efficient, but managing culture and people is an integral part of a Lean supply chain. "Lean is not a destination, and it's not just an activity," says Mike Buseman, chief global logistics and operations officer at Avnet, a Phoenix-based electronics distributor and logistics provider. "Lean never ends; it is part of an ongoing journey toward operational excellence."

Sustaining Lean initiatives is critical because even good processes become less efficient over time. Today's solutions might not work for tomorrow's problems, and companies that continually seek improvement will have the best success with Lean.

At Avnet, the Lean culture incorporates events ranging from daily quick wins to periodic overhauls that revisit the value stream maps and reimagine operations issues.

"Quick wins happen all the time," Buseman says. They're those small adjustments employees make daily to work more efficiently. Teaching employees Lean principles, and empowering them to make those changes, is part of Avent's culture.

"Avnet employs 20,000 team members worldwide," Buseman says. "If those 20,000 people feel compelled and empowered to contribute to Lean efforts, that's where the magic starts."

With your team onboard and a clear understanding of Lean tools, you're well on your way to banishing waste from your operations. ■

INBOUND LOGISTICS'

G75

75 GREEN SUPPLY CHAIN PARTNERS

If it's important to you to do business with sustainable transportation and logistics providers, you've come to the right place.

Inbound Logistics' 75 Green Supply Chain Partners (G75) profiles companies that are demonstrating their commitment to sustainable supply chain, logistics, and transportation practices. *IL* editors choose the G75 by considering a company's corporate sustainability initiatives, collaborative customer-driven projects, and participation in public-private partnerships. Four benchmarks carry weight in the decision-making: measurable green results, sustainability innovation, continuous improvement, and industry recognition.

The G75, presented alphabetically, focuses on companies that are leading by example, demonstrating measurable progress over the past few years as they integrate sustainability into their respective enterprises.

New fleet | ABF Freight

ABF Freight

Since 1976, ABF Freight has been conserving fuel and reducing emissions by voluntarily limiting the maximum speed of its trucks. And since 1994, the carrier has specified all new trucks include computerized engine shut-offs to automatically reduce idling, further limiting fuel consumption and emissions. To promote efficiency, ABF follows an equipment maintenance/replacement program, so the average age of its linehaul tractors is rarely more than two years, ensuring its trucks feature the most current fuel-saving technology.

Agility

Agility tracks its carbon footprint in 70 percent of its worldwide operations, making each facility responsible for its resource consumption and environmental impact. Working closely with shippers, the 3PL uses strategies such as in-transit goods consolidation, which helps achieve emissions goals by reducing packaging weight and the number of pallets used, and eliminating wasted space.

Alliance Shippers

Building its fleet of 53-foot refrigerated containers with the most current technology enables Alliance Shippers to move refrigerated goods via rail, reducing CO_2 emissions by 67.7 percent compared to the same goods moved by truck. As a SmartWay partner, Alliance Shippers continuously strives to improve fuel efficiencies within its refrigerated fleet. Thanks to recent upgrades and new equipment purchases, the company's fleet is now 95-percent CARB compliant.

American Airlines Cargo

In collaboration with Dallas/Fort Worth International Airport, American Airlines formed the Sustainability Alliance, which improves its environmental footprint through enterprise-wide sustainable practices ranging from alternative fuel vehicle fleets to responsibly managing emissions, water, and energy. In addition, the airline, working with Boeing, successfully piloted the 737-800 ecoDemonstrator program for reduced fuel consumption.

APL

APL is on target to reduce carbon exhaust emissions across its global operations by 30 percent by 2015. An influx of new green vessels featuring the latest energy-saving technology, operating at reduced speeds, will support this goal, along with initiatives such as optimizing vessel trim, speed, and routing; improving maintenance on vessel hulls to reduce drag in the water; and upgrading cargo handling equipment at APL terminals.

Green vessel | APL


Sustainable intermodal transport | BNSF

Averitt

Since joining the SmartWay program in 2004 as a founding partner, Averitt has lowered CO_2 emissions by about 27 percent, reduced nitrogen oxide emissions by 50 percent, and cut particulate emissions by 52 percent. The carrier's fuel conservation efforts include installing electronic technology that gathers data from tractor engine computers to track and measure fuel efficiency at the individual tractor level, and equipping trucks with systems that automatically shut down idling engines. Averitt also established fleet speed limits, and governs tractors accordingly.

Cardinal Logistics

Cardinal's fleet management comprises governing speed, installing Auxiliary Power Units, and implementing automatic idle shutdown and other modifications to increase fuel efficiency. The 3PL, a SmartWay partner since 2004, is also operating new, lower-emissions equipment and working to reduce fuel consumption, as well as testing renewable fuels, training drivers on proper maintenance and driving habits, and offering incentives for high MPG rates. In addition, dynamic routing reduces road miles and provides backhaul support.

Cargo Transporters

To build a greener fleet, Cargo Transporters equipped all its trucks with battery-powered bunk cooling, and all new equipment orders include wide-based tires and aerodynamic skirting to support fuel efficiency. In addition, the carrier's home terminal features 22 electrified truck parking spaces to power cab cooling.

BNSF

A range of technologies support BNSF's carbon emissions efforts, including the GenSet locomotive – an ultra low-emission, EPA-certified diesel switch locomotive with three low-horsepower engines that only operate when needed, instead of one large engine that runs at all times. BNSF operates 74 GenSet locomotives in Texas and California, saving fuel and reducing air emissions. In addition, more than 70 percent of the railway's 6,600 locomotives are equipped with idle-control technology, which automatically shuts down locomotives that are not in use.

Cat Lift Trucks

Cat Lift Trucks established an ongoing program to study and follow the EPA's Tier 4 regulations, aimed at lowering the amount of particulate matter (PM), or soot, released into the environment. The initiative focuses on implementing the new standards across the Cat Lift Trucks diesel truck lineup. The company's new Tier 4 interim compliant engines reduce PM emissions by up to 90 percent and NOx emissions by up to 50 percent. The engines also provide precise control over the combustion process, and improve fuel efficiency.

EPA-compliant forklift | Cat Lift Trucks

Celadon

Every new tractor Celadon purchases is SmartWay certified, and equipped with technologies to promote fuel efficiency, including low rolling resistance tires, aerodynamic skirting, external fuel-operated heaters, and idle-control technologies. The carrier's programs to reduce idling conserve approximately 12,000 gallons of fuel daily, and reduce CO_2 emissions by almost 50,000 tons annually. Reducing idling helped Celadon conserve more than five million gallons of fuel.

C.H. Robinson

C.H. Robinson invests in efficiencies and innovations aimed at reducing waste and improving productivity. These efforts include reducing empty miles—and fuel consumption—by selecting efficient transportation modes and contract carriers for every shipment. The 3PL also develops transportation and network optimization strategies to help shippers achieve savings through consolidation, resulting in fewer shipments and transportation miles, which cuts greenhouse gas emissions.

Con-way Inc.

Each Con-way business unit established initiatives to procure and preserve energy, reduce waste, and recycle. Con-way Freight and Con-way Truckload adjusted speed governors and idle settings in trucks, saving diesel fuel and reducing emissions. Its 3PL business unit, Menlo Worldwide Logistics, introduced its first LEED-certified warehouse, and operates 85 percent of its network miles using SmartWay-approved carriers.

Sustainability trailer | CEVA

CEVA

CEVA promotes green global operations through eco-sustainable warehousing; technology that saves and generates energy; innovative CO_2 measurement capabilities; and safe, fuel-efficient driving for its vehicle fleet. The 3PL incorporated features such as increased natural light, photovoltaic roof panels, and the use of rainwater run-off into new buildings. In addition, sites in the United Arab Emirates and Singapore are LEED-certified. CEVA provides shippers timely, accurate CO_2 measurement. In 2013, the company reduced one shipper's CO_2 emissions 60 percent by integrating nine European warehouses into one central distribution center.

Pallet pooling | CHEP

CHEP

CHEP's pallet pooling program facilitates appropriate end-of-life management, maximizing material reuse and diverting residual material from landfills. The network also enables more efficient transport distances between CHEP and shipper distribution and retail locations, which saves fuel, reduces transportation costs, and lowers CO_2 emissions.The company's GreenLanes program helps shippers increase productivity and eliminate unnecessary empty return truck trips by working with third-party transport companies to fill empty space on shipper or transportation provider trucks.

Corrugated pallets | Conitex Sonoco

Conitex Sonoco

Conitex Sonoco's LoadRunner corrugated pallets are 100-percent recyclable, and made from 75-percent recycled materials. In addition, the pallets' lighter weight reduces fuel usage during transport. The company's BulkSak FIBC bulk shipping bags are repaired, cleaned, and reused to extend the product lifecycle, then recycled at end of life. Since 2011, Conitex Sonoco's manufacturing plant in Arkansas has been operating under a sustainability program that includes a no-landfill initiative.

C.R. England

Along with expanding its dedicated fleet with 10 new LNG tractors, C.R. England grew its intermodal network significantly, and plans to add 450 containers in 2014. The carrier is increasing tractor and trailer aerodynamics, and fuel efficiency, through the use of wheel covers, trailer tails, and side skirts. To reduce idling, C.R. England uses bunk heaters, as well as IdleAir, a service that allows a driver to turn the truck's engine off and still have the benefit of conditioned air and 120v power without the environmental impact associated with an idling truck. The company is also testing platooning – linking two pairs of trucks that travel close together to draft off one another to increase aerodynamics.

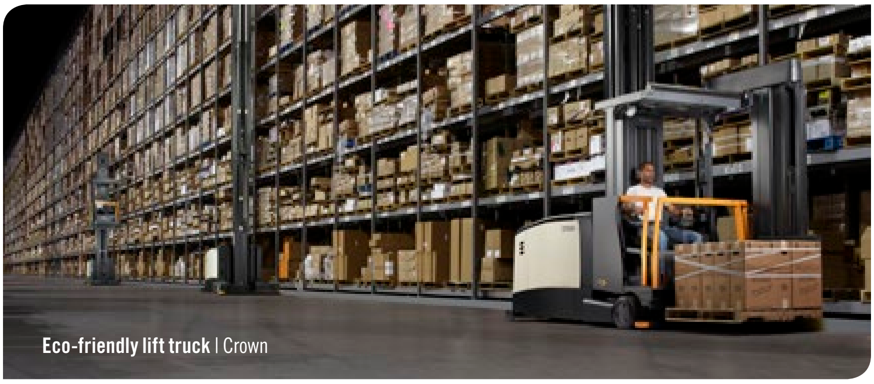
Covenant Transport

Since mid-2013, Covenant Transport has purchased 550 Freightliner Cascadia Evolution trucks that feature the latest engine efficiency technologies and advanced aerodynamics to significantly increase fuel economy. The carrier, a SmartWay partner since 2006, plans to add another 700 new Evolution trucks to its fleet by 2015. Additional fuel-saving measures include installing trailer skirts on all new trailers, retrofitting older models with skirts to remain CARB-compliant, and using fuel-efficient tires on all tractors.

Efficient Cascadia Evolution truck | Covenant

Crown Equipment Corporation

Crown builds energy efficiency into its products. For example, its RM 6000 Series reach trucks and TSP 6500/7000 Series turret trucks reduce energy consumption by returning energy to the battery during the lowering function. This feature supports fewer battery changes, boosts productivity, increases operating time, and provides 12 to 15 percent more run-time, for improved energy utilization and reduced costs. Both eco-friendly trucks reduce the energy required to run warehouses, and, with lift heights up to 505 inches and 675 inches, respectively, allow facilities to store more product in a smaller footprint.



Eco-friendly lift truck | Crown

High-tech horsepower | CSX

CSX

Applying friction modifiers and idle-reducing technologies to its locomotives allows the railway to increase fuel savings and reduce greenhouse gas emissions. CSX is also using trailing unit shutdown to optimize locomotive horsepower. This technology depowers non-lead locomotives when not in use, creating significant fuel savings without any effect on velocity or reliability. In 2013, the company saved 1.8 million gallons of fuel by implementing trailing unit shutdown.

DB Schenker

DC Schenker's corporate goals target attaining Eco Pioneer status by 2020, which includes reducing CO_2 emissions by 20 percent. To attain this goal, the company developed fuel-efficient driver training programs, resource-efficiency programs to reduce resource consumption at warehouse facilities, and intermodal initiatives aimed at determining the best modal shift, optimal route, and most suitable carrier for every load.


Electric locomotive | DB Schenker

Electric delivery vehicle | DHL

Deutsche Post DHL

In 2013, Deutsche Post DHL launched its StreetScooter electric delivery vehicle pilot project in Germany. In addition, the company offers shippers a range of GoGreen environmental service solutions worldwide. Both efforts support the goal Deutsche Post DHL set in 2008: to achieve 30-percent CO_2 efficiency improvement by 2020. To date, the company has improved its CO_2 efficiency by 18 percent compared to the 2007 base year.

DSC Logistics

DSC's sustainability goals focus on three strategic areas: supply chain network modeling and design, logistics center management, and transportation management services. Designing and implementing more efficient supply chain networks has significantly reduced carbon footprints. The 3PL's facilities maintain recycling, efficient lighting, and water and energy use reduction programs. In addition, electric forklifts make up 95 percent of DSC's forklift fleet. The company's goals include further waste stream reductions, Lean initiatives focused on cutting waste, and strategic supply chain modeling activities concentrated on reducing logistics center footprints.

Jet fuel savings | FedEx

FedEx

In 2013, FedEx implemented six new Fuel Sense initiatives, which collectively saved 6.15 million gallons of jet fuel, and avoided 59,423 metric tons of CO_2 emissions. The company's 40 total Fuel Sense initiatives saved 59.8 million gallons of jet fuel and 636,160 tons of CO_2 emissions in 2013. Since 2007, the Fuel Sense program has saved 247 million gallons of jet fuel and reduced annual fuel burn by five percent.

Natural gas truck | Freightliner

Freightliner

As part of Daimler AG's Shaping Future Transportation initiative, which strives to dramatically reduce fuel consumption and exhaust emissions in commercial vehicles of all classes, Freightliner Trucks offers one of the only conventional natural gas truck solutions in the industry. Available with liquefied natural gas or compressed natural gas fuel tanks, Freightliner's natural gas trucks and tractors are designed for high performance in a broad range of applications. The company's Cascadia 113, M2 112, and 114SD trucks are all available in natural gas-fueled day cabs.

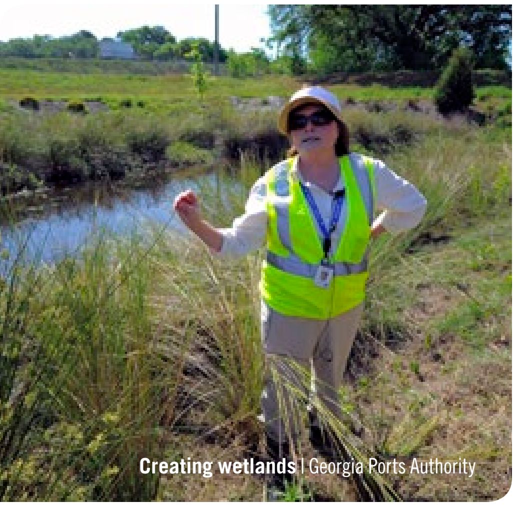
Geodis Wilson

In 2008, global transportation provider Geodis Wilson established its Blue Attitude sustainable development program, working with customers to help them maintain their own green strategies. The company also adheres to its constant commitment to minimize pollution and consumption of fuel, paper, energy, and water, and reduce the environmental impact of whatever waste it must dispose of.

GENCO

GENCO's Sustainability Commitment is to make sustainability an element of its entire operation. GENCO has recycled more than 12,000 tons of material; reduced electric consumption by more than 50 million kWh; and achieved zero-waste-to-landfill in two facilities, with additional facilities in process. Additionally, GENCO has achieved Class-G Facility Certification at 53 facilities; initiated an Energy Usage Tracking portal on the GENCO intranet; and participates in the EPA's SmartWay program.

Zero-waste-to-landfill efforts | GENCO



Creating wetlands | Georgia Ports Authority

Georgia Ports Authority

The Georgia Ports Authority recently created 13.8 acres of wetlands over a period of 2.5 years. The project treats 100 million gallons of stormwater annually, and creates natural wildlife habitats in the heart of the Port of Savannah. Other sustainability intiatives at the port include 16 silt suspension units, the release of 212,000 turtle hatchlings, and electrifying all 27 of the port's ship-to-shore cranes to save more than 1.8 million gallons of diesel fuel annually.

Hub Group

Hub Group's intermodal conversion initiative focuses on helping shippers shift cargo to modes that reduce emissions and fuel consumption. Another initiative is to shift 75 percent of Hub Group Trucking's 550 tractors to day cabs by the end of 2014 to save on idle time. In addition, some of the company's trucking terminals are reducing environmental impact by operating on biodiesel. Hub Group's corporate headquarters in Oak Brook, Ill., has been LEED Gold certified. The company is also an EPA SmartWay partner.

Efficient intermodal shipments | J.B. Hunt

IFCO Systems

IFCO Systems' returnable plastic containers (RPCs) provide produce shippers a sustainable packaging alternative to corrugated boxes. When compared to shipping the same amount of produce in corrugated boxes, the RPCs generate 82 percent less solid waste, consume 92 percent less water, require 49 percent lower energy demand, and reduce ozone depletion by 76 percent. For every 1,000 pounds of produce shipped in IFCO RPCs instead of standard boxes, growers and retailers save 13 pounds of solid waste, more than 200 kWh of energy, and 360 gallons of water.

Kenco Logistic Services

In 2013, Kenco upgraded lighting at two facilities in Tennessee and Pennsylvania. The lighting array saved about 222,170 kWh annually, and is anticipated to reduce greenhouse gas emission by 137.2 tons annually (the air-scrubbing equivalent of a 37.9-acre forest). Additional sustainability initiatives at Kenco include employing a full-time Leader of Sustainability to oversee and drive sustainability initiatives; recycling materials; using LEED-certified buildings; conserving energy using modern technology; utilizing hybrid automobiles in the company fleet; optimizing networks to reduce waste; installing new window film at corporate headquarters.

J.B. Hunt

J.B. Hunt provides shippers with its Cool Transport service, designed in cooperation with BlueSource LLC, which offsets verified emission reduction credits with existing J.B. Hunt transportation offerings to create carbon-neutral transportation solutions. The company also focuses on converting over-the-road shipments to intermodal shipments, saving more than 200 gallons of fuel and two tons of carbon gas emissions per shipment. Other innovations include reducing empty miles and engine idling, governing top speed, optimizing mileage, using biodiesel fuels when available and appropriate, installing aerodynamic body moldings on tractors, and training drivers to be more efficient.

Corporate headquarters window film project | Kenco

Green fleet | Kenworth

Kenworth

Kenworth provides fuel-saving technology solutions that help increase fuel efficiency and reduce emissions. The company's green fleet initiatives include the use of aerodynamic trucks, compressed and liquefied natural gas trucks, and medium duty diesel-electric hybrids. Among the company's natural gas truck offerings is the T680 natural gas truck, in both sleeper and daycab configurations, to provide the option of using natural gas in both short- and long-haul operations. In addition to its green truck initiatives, Kenworth's parent company, PACCAR, reduced greenhouse gas emissions intensity at manufacturing facilities worldwide by 29 percent.

LEGACY Supply Chain Services

LEGACY is committed to improving its facility and office operations to support green practices and integrate an environmentally friendly business model, and understands that every green practice, whether large or small, creates an impact on the environment. The SmartWay partner supports its sustainability mission through its own facility operations, as well as by helping its customers develop environmentally friendly initiatives in their own facilities. LEGACY also implements green practices in its maintenance facilities by recycling fluids, batteries, tires, and other appropriate products.

LPG lift truck | Landoll

Landoll

Landoll offers multiple products that support greener warehouse and manufacturing operations. For example, the company provides lift trucks powered by lower-emissions fueling alternatives such as liquefied petroleum gas. Additionally, Landoll's Bendi Electric Narrow Aisle line of lift trucks helps save fuel and reduce an operation's carbon footprint without sacrificing lifting power.

Cargo plane weight reduction | Lufthansa

Lufthansa

Lufthansa initiated a weight loss program on its cargo fleet to reduce fuel consumption. Through the initiative, all objects not absolutely required on board were expelled from the airline's MD11 cargo planes, reducing the weight of the plane by 77 pounds. While the accomplishment seems small, the fuel requirement of the MD11 fleet drops by 88 tons, which corresponds to 275 tons of carbon emissions. Lufthansa has also been researching biofuels in its flight operations, and has made a commitment to reduce emissions 25 percent by 2020.

Lynden

Lynden's sustainability policy calls for meeting or exceeding environmental regulations, maximizing fuel efficiency, and monitoring and guarding against accidents, emissions, and avoidable pollution. The company has been an EPA SmartWay partner since 2008, and its truck fleet is among the most fuel efficient in the nation, according to SmartWay's program criteria. The use of routing software, side skirts, wide-base single tires, and idle-reduction equipment has also contributed to achieving Lynden's fuel savings and emissions reduction goals.

Low-emissions containerships | Maersk

Maersk Line

Since the Maersk Group launched its first sustainability strategy in 2010, it has made demonstrated progress based on a systematic approach of integrating sustainability into its operations. Maersk Line set a target in 2007 to reduce CO_2 emissions by 25 percent by 2020. The shipping line met that goal eight years early in 2012, and has adjusted the goal to a 40-percent reduction from 2007 levels by 2020.

Murphy Warehouse Co.

Murphy Warehouse Company has made environmental sustainability a cornerstone of its long-term business strategy. Through a comprehensive environmental management system, the company has made significant investments to upgrade its campuses sustainably. Murphy earned LEED Gold, LEED Silver, ISO 14001:2004 and ENERGY STAR certifications at many of its facilities, while two more facilities are currently in the process of earning these certifications, with one targeted for LEED Platinum.


GreenPort initiative | Maryland Port Administration

Maryland Port Administration

With a grant from the U.S. Environmental Protection Agency (EPA), the Maryland Port Administration can continue the Port of Baltimore's dray truck replacement program to March of 2016. The grant will help Baltimore replace at least 22 older dray trucks with newer, cleaner trucks that meet or exceed 2010 EPA emission certified engine standards. The EPA also recognized the Maryland Port Administration for several other environmental initiatives, including its dredged material management program, which reuses dredged material in innovative ways such as wetland restoration and island re-creation; and the clean diesel program, which installs cleaner-running engines in port equipment including locomotives and harbor craft.

Natural gas trucks | NFI

NFI

NFI ranks in the top 20 percent of SmartWay partners for overall environmental performance, and the EPA awarded NFI the SmartWay Excellence Award three times in recognition of its sustainability efforts. NFI runs natural gas fleets in California and Texas, with a Pennsylvania fleet launching soon, and the company's trucks use AirTabs, trailer skirts, and speed limiters to decrease fuel usage. Many of NFI's facilities, including its corporate headquarters, run on solar power, and these initiatives have eliminated more than 13 million pounds of CO_2. NFI recycles 360 tons of plastic and 11,000 tons of cardboard each year, and it reduced plastic film usage by 57 percent in 2013 by converting to high-performance stretch film.


Crescent Corridor improvements | Norfolk Southern

Norfolk Southern

Norfolk Southern works carefully to achieve balance between the environment and business operations. The railway has completed a large portion of its Trees and Trains project, an initiative to reforest 10,000 acres with more than six million native hardwoods and cottonwoods in the Mississippi Delta. The reforested land eventually will generate 1.12 million tons of carbon-offset credits, equivalent to one-fifth of Norfolk Southern's annual carbon emissions. The company has also made significant infrastructure investments. For example, its Crescent Corridor spans 11 states, and has the potential to divert long-haul freight from trucks to trains, and reduce greenhouse gases by 1.9 million tons annually, when fully developed.

Old Dominion Freight Line

In 2013, Old Dominion Freight Line's sustainability initiatives saved the company 60,911 tons of CO_2 – the equivalent of removing 11,633 cars from the road or saving enough electricity to power 7,601 homes per year. Green initiatives for this EPA SmartWay partner include use of wide-based tires, reduced highway speeds, idle reduction, automatic tire inflation, improved freight logistics, improved aerodynamics, longer combination vehicles, side skirts for trailers, and special driver training programs. Combined, these initiatives enabled Old Dominion to reduce fuel consumption more than six percent since the initiative launched.


Reduced highway speeds | Old Dominion

Energy-saving vessel | OOCL

OOCL

OOCL won the Green Flag and Green Ship awards from the Port of Long Beach for slowing down in the harbor and reducing smog-forming emissions and diesel particulates from ships. Additionally, OOCL equips its facilities with Alternative Maritime Power Systems, which allow vessels to use shore-supplied electricity instead of burning fuel when at berth. The shipping line also is a member company of the Clean Cargo Working Group, which actively works to improve environmental performance in marine container transport through measurement, evaluation, and reporting.

ORBIS Corporation

As a manufacturer of reusable plastic packaging, pallets, containers, dunnage, and bulk systems, ORBIS Corporation helps users design solutions and execute reusable packaging programs for long-term sustainability. ORBIS offers environmental and economic analysis services that help companies calculate the impact of reusable packaging on efficiency and bottom lines. Through lifecycle assessments to compare reusable and single-use packaging, ORBIS helps companies reduce greenhouse gas emissions, solid waste, and energy usage. The company also tracks and measures its own resource utilization to continuously conserve natural resources and reduce waste.


Reusable pallet | ORBIS

Recyclable wood block pallet | PECO Pallet

PECO Pallet

PECO Pallet was founded on the principle of reusing pallets to conserve resources. PECO's wood block pallets are built from responsibly forested timber, and are continually repaired, reused, and recycled. No harmful chemicals or hazardous materials are used on PECO pallets, and all materials are eventually reused or recycled. By efficiently managing a controlled pallet pool, PECO pallets are turned an average of four times per year. Strict control and maintenance standards extend pallet life to more than 10 years. PECO Pallet's operations and logistics teams work closely with manufacturers, retailers, and depots to reduce miles, ensure full truckloads, and improve efficiency.

Penske Logistics

Penske Logistics' sustainability efforts include ongoing evaluation and implementation of new technologies including alternative fuels, proper specification of late-model vehicles, idle-control and aerodynamic devices, rigorous management controls, and monitoring of fuel economy at the driver and route level. These fleet efficiencies reduced CO_2 by 32 percent, NOx by 33 percent, and particulate matter by 60 percent since 2008, and earned Penske Logistics the 2013 SmartWay Excellence Award from the EPA. In addition, Penske implements solid waste reduction initiatives, supports renewable energy generation, conducts an annual greenhouse gas emission inventory, and discloses greenhouse gas emissions to the Carbon Disclosure Project.

Late-model vehicles | Penske Logistics

Performance Team

Performance Team (PT) continuously evaluates and implements processes, technologies, and products to drive green efforts and generate measurable results. PT relocated its South Carolina transload facility to an on-port terminal, eliminating 50 round-trip miles of drayage to inland Charleston operations. The 3PL recently implemented the Ride-On Tire Protection System across its fleet. This non-toxic, non-flammable, readily biodegradable/recyclable tire additive acts as a balancer, pressure maintainer, and flat preventer to improve fuel efficiency by up to three percent, and extend the useful life of tires by up to 25 percent. Performance Team is a member of the Coalition for Responsible Transportation, and a SmartWay partner.

PITT OHIO

In 2013, PITT OHIO improved miles per gallon by 1.8 percent in its fleet. The carrier also reduced its electricity usage by almost 0.5 percent, and reduced carbon output by 1.4 percent over 2012 levels. PITT OHIO is currently working toward a clean fuel CNG truck pilot, and installed green solutions at its buildings where possible. The installation of solar panels made the company's East Windsor facility energy-neutral. The carrier uses its carbon calculator to help shippers understand their Scope 3 greenhouse gas emissions. PITT OHIO received the Heinz Endowment's First Breathe Award, and qualified at Challenger level for Sustainable Pittsburgh's Business Compact.

Port of Los Angeles

The Port of Los Angeles continues to develop innovative programs and partnerships to reduce ocean-going vessel (OGV) emissions. The port has made significant progress on pre-existing OGV emissions reduction programs, such as the Vessel Speed Reduction Incentive Program, use of low sulfur fuel, and use of Alternative Maritime Power. The Port of Los Angeles has been instrumental in launching the Environmental Ship Index, which rewards ocean carriers for bringing their newest and cleanest vessels to the port. In 2005, the Port of Los Angeles implemented the Clean Truck Program, which replaces older polluting drayage trucks with cleaner trucks, through a progressive ban on older technologies.

Environmental Achievement award | Port of Long Beach

Port of Long Beach

In 2006, the Ports of Long Beach and Los Angeles adopted The Clean Air Action Plan. In addition to that initiative, the Port of Long Beach began landscaping projects, conducted in accordance with the port's Sustainable Landscape Palette, which describes appropriate native and draught-tolerant species for the locale. A pilot solar car port has been up and running at the port for almost one year. The car port is the first step in a process that will maximize renewable energy through the Harbor District. The port also incorporates green building principles into new building design through the U.S. Green Building Council's LEED certification program.

Port of Seattle

The Port of Seattle has undertaken several policies to support its environmental stewardship and energy efficiency. It plans to reduce air pollutant emissions by 50 percent from 2005 levels; reduce carbon emissions from all port operations by 50 percent from 2005 levels; and reduce aircraft-related greenhouse gas emissions at Sea-Tac by 25 percent. The Port of Seattle will meet future growth in energy usage through conservation and renewable sources. It also is working to prevent sprawl in less-developed areas of Puget Sound by anchoring the region's urban industrial land use.


Energy efficient port operations | Port of Seattle

Port of Tacoma

Among its sustainability efforts, the Port of Tacoma cleaned up legacy contamination to return more than 420 acres of property to productive use under protective measures; preserved more than 70 acres of open space to serve as a natural buffer between industrial operations and residential areas; pioneered low-impact development technologies to treat industrial stormwater runoff; purchased offsets to support renewable green power projects in Washington and Oregon; retrofitted a marine cargo terminal to allow ships to plug into electric shore power to reduce diesel and greenhouse gas emissions; and developed the Northwest Ports Clean Air Strategy, in partnership with the ports of Seattle and Metro Vancouver, B.C., to reduce port-related emissions.


Low-emissions terminal | Port of Tacoma

Railex

As a SmartWay partner, Railex provides cold chain 3PL services that reduce environmental impact. Railex's temperature-controlled private rail system is an environmentally friendlier alternative to cross-country truck shipments. Since 2006, Railex has removed the need for more than 429 million long-haul truck freight miles, which saved approximately 68 million gallons of diesel fuel and more than 1.4 million tons of carbon emissions from being released into the atmosphere.

The Raymond Corporation

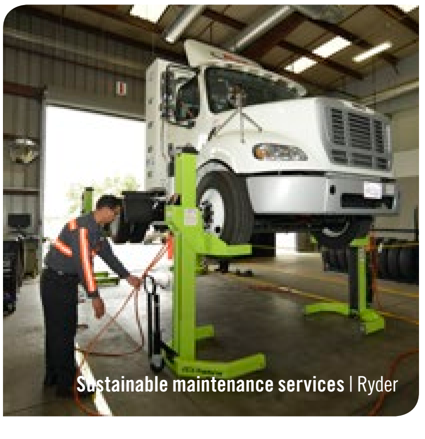
To help warehouses and DCs achieve more sustainable materials handling operations, The Raymond Corporation delivers Eco-Performance, an approach to designing and engineering forklift solutions for maximum economic and ecological benefits. According to United States Auto Club testing, the Raymond Swing-Reach forklift uses up to 40 percent less energy; the Raymond Reach-Fork forklift uses up to 21 percent less energy; and the Raymond Model 4250 stand-up counterbalanced forklift uses up to 17 percent less energy than other models. Raymond forklifts enable less forklift battery charging, increasing materials handling equipment uptime; reduce CO_2 emissions, reducing carbon footprint; and offer faster material handling cycle times, allowing for more pallet moves.

Ruan

Ruan utilizes a variety of environmentally friendly strategies, including idle reduction and auxiliary power unit usage, low-viscosity lubricants, reduced highway speeds, lightweight equipment, paperless technologies and processes, and driver training with an emphasis on safety and fuel consumption. The carrier continually investigates new, sustainable fuel options such as compressed natural gas (CNG), and currently operates one of the largest heavy-duty CNG fleets in the country hauling dairy products in Indiana. The use of CNG at this operation eliminates 1.8 million gallons of diesel fuel annually. Ruan is a longstanding SmartWay partner, and a SmartWay Excellence Award winner in 2012 and 2013.

Ryder

Ryder has been committed to energy conservation for more than one decade. The 3PL is currently tracking energy use and measuring greenhouse gas emissions from select Ryder-owned/operated stationary sources in the United States and Canada, utilizing an external utility specialist. The new RydeGreen line of tractors and trailers, designed to reduce fuel consumption and greenhouse gas emissions, offers shippers the latest technology and design to help reduce idling and improve fuel efficiency. In 2006, Ryder committed to a "one-fuel" policy, converting all fueling locations to low emissions Ultra Low Sulfur Diesel (ULSD) fuel. The company is currently delivering 100 percent ULSD at all fueling locations.



Sustainable maintenance services | Ryder

CNG fueling station | Saddle Creek

Saddle Creek Logistics Services

Sustainability is an integral part of Saddle Creek's supply chain strategies. Examples include: a new compressed natural gas fleet that helps to reduce carbon footprint while making deliveries in Florida and Georgia; strategically positioning distribution centers to minimize shippers' transportation requirements and carbon footprint; adding trailer skirts to make tractors more aerodynamic; and using low-resistance tires. Saddle Creek decreased electricity, water, and fuel consumption across all its facilities nationwide, and recycles thousands of pounds of materials each year.

Clean emissions equipment | Saia

Saia LTL Freight

Saia LTL Freight operates and maintains green initiatives, including a no-idling policy, aggressive equipment maintenance schedule, and trailer skirt installation. Through investing in technology and driver training for a progressive shifting program, more than 75 percent of Saia drivers make 85 percent of shifts in the optimal range. Three years into this progressive shifting program, Saia's fleet increased to 6.3 MPG, which reduces the amount of diesel fuel consumed by approximately 775,000 gallons. In 2013, Saia invested $122 million in new fuel-efficient equipment that produces cleaner emissions; in 2014, the carrier plans to spend close to $100 million on new equipment and technology.

South Carolina Ports Authority

The South Carolina Ports Authority (SCPA) demonstrates its commitment to sustainability through several initiatives. Its Clean Truck Certification Program requires that all dray trucks calling the container terminals must certify that their engine year is 1994 or newer. By keeping the oldest, dirtiest trucks off the terminals, SCPA is improving air quality on the terminal and throughout the Charleston region. In addition, SCPA operates a network of air monitors in its container terminals, ensuring that port-related activity does not create air quality problems around its facilities. The port enforces a no-idling policy around its facilities, and is aggressively pursuing the use of natural gas for port operations.

Energy-efficient truck | Schneider

Schneider

Through new technology improvements such as low-emission engines, aerodynamic tractors and trailers, and low-rolling resistance tires; and operational improvements including increased tire inflation standards and more frequent maintenance, Schneider has improved fuel efficiency 13 percent since 2008. The carrier annually saves more than 26 million gallons of fuel, and reduces carbon dioxide emissions by more than 300,000 tons. It also voluntarily slowed its fleet to 60 MPH, which saves an additional 3.6 million gallons of diesel fuel and eliminates 42,000 tons of carbon dioxide emissions annually. Schneider was recognized with the SmartWay Award of Excellence five times since 2005.

SDV

SDV's SAVE PROGRAM helps shippers design and maintain an eco-responsible supply chain. This solution regularly monitors the carbon footprint of shipments, with a CO_2 calculator directly linked to SDV's transportation management system; optimizes the supply chain and reduces CO_2 emissions with a comprehensive diagnosis of shippers' logistics systems; offers consultancy to help shippers progress toward continuous sustainability improvement; and aims to achieve a carbon-neutral logistics system and contribute to global sustainable development initiatives.

Hybrid truck | SDV

Toyota Material Handling U.S.A. Inc.

All Toyota Material Handling U.S.A. internal combustion and sit-down electric lift trucks sold in North America are produced at the Toyota Industrial Equipment Mfg. Inc. manufacturing facility in Columbus, Ind., a zero-landfill plant. During the manufacturing process, Toyota analyzes and minimizes the environmental impact of each product at every stage of the production cycle. This process helped Toyota's lift truck plant in Columbus reduce volatile organic compound emissions by 33 percent, cut hazardous air pollutant emissions by 80 percent, reduce energy consumption by 40 percent, and lower natural gas consumption by 65 percent.

Eco-friendly lift trucks | Toyota Material Handling U.S.A.

TransGroup Worldwide Logistics

TransGroup was the first 3PL to become a SmartWay partner, and continues to evolve that partnership with new services and technologies. TransGroup is committed to improving its environmental knowledge and impacts by collaborating with shippers, the SmartWay Transport Partnership, and its carrier base to identify and reduce the environmental impacts of its collective freight transportation and logistics operations. TransNeutral, TransGroup's eco-responsible transport logistics solutions, help to do just that. Examples of TransNeutral services include limiting greenhouse gas emissions in warehousing and distribution operations; asset recovery and reverse logistics; end-of-product-lifecycle disposition; and shipment emission metrics.

Transplace

As a non-asset based 3PL, Transplace's primary means to reduce emissions and save on fuel is determined by the transportation service providers and modes it chooses. Transplace utilizes proprietary technology that allows it to search for SmartWay carriers as a carrier selection criterion. In addition, Transplace is continually looking at opportunities to convert truckload freight to intermodal or rail providers. It also employs technology that enables shippers to consolidate orders into environmentally conscious routings, mode selections, and carrier assignments. The company also works with private/dedicated fleet operations and other private fleets to increase backhauls and reduce the number of trucks on the road.

Transportation Insight

Transportation Insight provides shippers Lean supply chain solutions that result in reduced carbon emissions, lower mileage, and lower fuel costs, while optimizing their supply chain. Through use of the company's Insight TMS, shippers achieve green supply chain results via optimal transportation mode and carrier selection. It also streamlines and optimizes supply chain networks based on simulation with historical data, reducing energy costs, mileage, and fuel usage. Transportation Insight is a SmartWay partner, and works with the EPA on programs designed to increase energy efficiency while significantly reducing greenhouse gases and air pollution.

U.S. Xpress

U.S. Xpress continues to develop and strengthen its policies and programs relative to environmental sustainability. The carrier's focus on conservation and research helped develop green initiatives that offer a payback in savings to both the bottom line and the environment through truck alterations such as fuel-efficient tires, aerodynamic mud flaps, engine controller-based fuel incentive program, road speed limit policies, and a true GPS dual-mode satellite communications system to improve routing and conserve fuel. In addition, in 2013, U.S. Xpress saved 65 tons of paper, 1,100 trees, 450,000 gallons of water, 270,000 kWh of electricity, and 30,000 gallons of oil through its sustainability efforts.

UTi

UTi crystallized the implications of its business activities on the environment into UTi thinkgreen. Current thinkgreen activities include calculating shippers' carbon footprints based on greenhouse gas protocol standards; integrating sustainability into UTi's global ISO 9001:2008 quality compliance effort, and piloting ISO 14001 in some regions; expanding network and route optimization capabilities to analyze and report the green impact of various scenarios for shippers; and working with shippers to establish LEED-certified buildings.

Experimental locomotive | Union Pacific

Union Pacific

Union Pacific's environmental initiatives and accomplishments include: eliminating an estimated 33.7 million metric tons of greenhouse gases due to shippers choosing rail over truck transportation; diverting from landfills more than 830,000 million tons of waste, which accounts for an estimated 77 percent of the company's waste; recycling or distributing more than 400,000 pounds of electronic equipment and nearly 1.4 million pounds of signal batteries; and testing an ultra-low emitting GenSet locomotive fitted with diesel particulate filters to further reduce particulate matter emissions beyond its normal low level.

Emissions offset | UPS

UPS

The UPS global network reduces the supply chain emissions of 8.8 million customers daily through intermodal shifting, network optimization, and fleet/facility efficiency measures. UPS intermodal shifting avoided approximately 3.3 million metric tons of carbon emissions in 2012 alone, while UPS maintains one of the largest private alternative fuel fleets in the industry with more than 3,100 alternative fuel and advanced technology vehicles. Measures such as retrofitting Boeing 767 aircraft with winglets to boost aerodynamic efficiency allow UPS to reduce more than 68,000 tons of CO_2 annually through its air fleet.

Weber Logistics

Since 2009, Weber has reduced fleet carbon emissions by 37 percent – the equivalent of removing 2,047 cars from the road every year. Weber was one of the first members of the EPA SmartWay emissions reductions program, and its fleet maintains the highest EPA rating available. Weber's drayage solution uses only clean-certified trucks at ports and rail yards, meeting EPA standards for 2007-model clean-diesel trucks. Innovative lighting solutions in Weber warehouses cut electrical consumption. To reduce empty miles, the company continuously optimizes last-mile logistics and uses partner carriers in some areas to reduce travel. Inside the warehouse, Weber replaced many gas-powered materials handling units with battery-powered units.

Fuel-efficient fleet | Werner

Multi-level order selector | Yale

Yale

Yale's commitment to all environmental initiatives is reinforced through participation in developing industry standards to adopt green technologies safely and reliably. Yale has used low Volatile Organic Compound (VOC) paints for more than 10 years, and introduced powder coating as an alternative to traditional painting to further reduce VOCs. Electrical and natural gas usage is monitored as part of an energy consumption management program. All Yale sites have focused programs for extensive recycling, and maintain programs to recycle lift truck batteries, tires, and oil, both for internal operations and for customers. Yale's manufacturing facilities are ISO 14001 certified.

Werner Enteprises

Werner continues to significantly improve miles per gallon and reduce emissions through advanced sustainability initiatives and capital investments. Since 2007, Werner has conserved more than 100 million gallons of fuel, and reduced its carbon footprint by more than one million tons based on MPG improvements alone. A winner of the 2013 SmartWay Excellence Award, Werner utilizes industry-leading sustainability technologies, such as diesel-fired heating systems to reduce truck idle time; aerodynamic trucks; its own ArrowShield trailer skirts; tire inflation systems; and the newest diesel technology. Recently, Werner announced it would add 10 compressed natural gas trucks to its fleet.

YRC Worldwide Inc.

The transportation providers of YRC Worldwide aggressively address greenhouse gas reduction strategies by limiting truck speeds to 62/63 MPH, extensively using intermodal service with railroad providers, setting limits on daily idling with over-the-road and city operations, using environmentally efficient longer combination vehicles where allowed, and practicing one of the most aggressive tire pressure inflation and monitoring programs in the industry. YRC's large-scale network optimization strategy continually reduces empty mile percentages, and creates new lane densities that optimize equipment use. The network of service centers allows YRC to effectively "car pool" for shipments.

Yusen Logistics (Americas)

To improve energy efficiency and reduce environmental impact, Yusen Logistics (Americas) installed a SmartWatt Energy lighting system in its 225,000-square-foot warehouse in Port Murray, N.J. The company replaced more than 300 lamps with energy-efficient T5 and T8 lamps combined with electronic ballasts and sensors to improve lighting standards, as well as generate significant energy and maintenance cost savings. Yusen Logistics expects an 81.7 percent reduction in total annual lighting costs, including a power savings consumption of 83 percent compared to the previous year. In addition, the system will eliminate 762,678 pounds of carbon dioxide each year.

Economic Development:

The Care and Feeding of U.S. Enterprise

Site selection is no longer just about location, location, location. Companies are now interested in laying down roots in regions that inspire and encourage innovation, and nurture the entrepreneurial spirit.

By Joseph O'Reilly

Logistics site selection is all about due diligence. Whether it's siting an e-commerce fulfillment center, import deconsolidation facility, general merchandise warehouse, or hybrid retail/fulfillment space, companies whittling down their shortlists run through a litany of considerations: labor cost and availability, proximity to market, transportation accessibility, utility rates, and business tax incentives. Different industries prioritize one criterion over another. Utility rates trump labor for more data-intensive purposes; heavy commodity sourcing may favor rail access over road.

Whatever the magic formula is, companies have primary criteria that help define their unique requirements; secondary and tertiary considerations further narrow the options. It's why economic development agencies at all levels—from municipal to regional to state—spend a lot of time and effort pulling and parsing countless data points, filtering to fancy, in attempts to capture the attention of site selection teams.

But value can't always be neatly categorized or quantified. Sometimes it's intangible—like entrepreneurial spirit.

There's something to be said for areas that inspire and nurture enterprise. U.S. entrepreneurship is in a downward spiral, according to a recent Brookings Report. For the first time in 30 years, the number of business failures exceeds the number of startups in the United States.

As talk of an American manufacturing renaissance continues to surface, companies are starting to take notice of regions such as Northwest Arkansas, Cleveland, and Bentonville, Ark., that encourage and celebrate business development, expansion, and innovation.

Northwest Arkansas: Innovative By Nature

Northwest Arkansas is off the beaten track. The 500,000-people-strong metro area, which comprises four cities—Fayetteville, Springdale, Rogers, and Bentonville—is a cultural crossroads between the South and the Midwest. The deep-wooded Ozark Mountains, well known for their crystalline rivers and geological wonders, still exude a frontier sensibility.

But there's another wonder. Northwest Arkansas is home to three billion-dollar juggernauts: the world's largest retailer; the world's second-largest beef, poultry, and pork processor; and one of the largest transportation companies in the United States. With a population roughly the size of Fresno, Calif., the region hosts as many Fortune 500 companies as Kansas City, Indianapolis, and Memphis; and more than Austin, Des Moines, Jacksonville, and Orlando.

Brand names the likes of Walmart, Tyson Foods, and J.B. Hunt turn heads. Maybe it's something in the water—freshwater springs fed and filtered through eons of limestone formations. More likely it's the legacy of entrepreneurship and the expectations forged by Walmart, the world's foremost supply chain.

"The big brand companies in Northwest Arkansas embrace an entrepreneurial spirit," explains Greg Primm, vice president of operations, Acumen Brands.

Acumen Brands is among the many heirs to the entrepreneurial legacy. An e-commerce brainstorm by a doctor and lawyer who both tired of their professions, and decided to sell medical scrubs exclusively online, the company has quickly grown into a lifestyle apparel-branded mini Amazon.

The company is eclectic—from the wide-open dot.com feel of its corporate offices to the Kiva robots roaming its fulfillment center across the street to its marketing partnership with country musician Ronnie Dunn. This is the reality of Northwest Arkansas.

You find a similar verve at CrossFleet, a Fayetteville IT startup envisioned by Clint Elcan and Jeremy Williams, both of whom cut their teeth at J.B. Hunt. They identified a problem in the trucking industry—a technology gap among smaller owner-operators and independent contractors—and devised a mobility app that uses driver cellphone GPS data to help shippers and carriers track assets.

Then there's EcoVet, a Rogers-based manufacturing company founded by Drake Vanhooser and his father. They wanted to provide jobs and training to military veterans transitioning to civilian life, while allowing them flexibility to return to school. With the support of Walmart and others, they put in motion a business plan to recycle and make furniture from out-of-use trailers.

Not to be outdone, Northwest Arkansas' very own railroad is the epitome of bootstrapping ambition. The Arkansas & Missouri (A&M) runs 150 miles from Monett, Mo., in the north to Fort Smith, Ark., in the south. Uniquely, it interchanges with three other Class 1 railroads: BNSF, Union Pacific, and Kansas City Southern.

The advantage? A&M and its customers have options, explains Jim Seratt, general manager, marketing and transload services. The shortline isn't captive to any one railroad, which affords it greater flexibility to develop innovation solutions for rail shippers.

For example, A&M helped Pittsburg, Calif.-based steel manufacturer USS-POSCO Industries rethink the way it delivered product to Texas. The company used to ship product across the country via truck. By transitioning to intermodal, it was able to reroute shipments via BNSF Railway to Missouri, interchange with A&M through Arkansas, then use the shortline's drayage operation to handle the last mile to destination.

USS-POSCO saved $60 per ton by shifting to rail/intermodal. Considering the thousands of tons of steel coil it moves, that's a hefty savings.

As a site selection factor, entrepreneurism can't be easily overlooked—especially as the United States looks to stimulate the economy by supporting small-business growth.

Cleveland Expresses Itself

The pathfinder spirit of the Ozarks inspired Sam Walton, John W. Tyson, and Johnnie Bryan Hunt to become pioneers in their respective industries. That lineage lingers to this day. But sometimes necessity forces invention.

Consider what's happening at the Port of Cleveland, Ohio. Port officials recently debuted an express cargo service between Cleveland and Antwerp, Belgium, via the St. Lawrence Seaway. The monthly round-trip run, which made its first port call in April 2014, ferries non-containerized and containerized freight between the ports. It is the only regularly scheduled international service linking the Great Lakes region to Europe.

The Port of Cleveland introduced the service to diversify its freight portfolio. Currently, about 95 percent of the port's general cargo business is imported, non-containerized steel in various forms—coils, rods, bars, and beams. International shipping lines that serve Cleveland share a similar operating model: they bring in steel, unload all or part of that load, then make runs to other Great Lakes ports. Once

Arkansas-based Acumen Brands embodies the entrepreneurial spirit. The eclectic company operates a portfolio of e-commerce sites in diverse industries, including work apparel, medical scrubs, and country lifestyle apparel.

vessels are empty, they sail to Duluth or Thunder Bay, are loaded with grain, and travel back to Europe.

"The shipping lines are using non-containerized steel as backhaul to position vessels into the Great Lakes to handle grain exports," explains David S. Gutheil, vice president for maritime and logistics, Port of Cleveland. "As a result, the port misses out on a lot of heavy machinery, capital equipment, and containerized cargo that we can't handle because of insufficient vessel capacity."

For the steamship lines, that's a moneymaking venture. Consequently, when the port came calling about its idea to run a Cleveland-to-Antwerp service, there were no takers. The Port of Cleveland was forced to circumvent convention and charter a blue-water strategy of its own.

"We developed the service alone out of necessity," Gutheil says. "No vessel company was going to step up and be willing to start a business with no guarantee of cargo, and without bringing anything else to the table.

"It became evident the only way this new service would happen is if the port started the business itself, and served as the business owner," he adds.

So the Port of Cleveland did just that, partnering with Dutch vessel operator Spliethoff. The arrangement is without precedent. The port leases a vessel on a monthly basis and pays for fuel. It alone has control over the business, marketing the new value proposition to prospective customers.

Big Risks, Huge Rewards

The risk is big. But so are the rewards. After costs are accounted for, whatever money is left over is pure profit. And because the port has a vested interest in the service, its incentive is huge.

"Running the service allows us to be more entrepreneurial," says Gutheil. "We're involved in quoting rates to customers because we are the business owner. We also can offer localized, personal-touch advantages that larger ports might not have."

"If a shipper has cargo or a container delivered to the port, and has a question or wants specific information, we can be on the dock in two minutes," he adds. "You won't see that level of service at big ports."

If the service proves popular, the port has flexibility to add another vessel and scale capacity to demand. Some shippers have already said they'd be interested if the service ran more frequently.

"This is an example of a private/public entity being entrepreneurial," says Mark Chesnes, founder and president of InterChez Logistics Systems, an Akron, Ohio-based 3PL. "You don't see that anywhere else. The port is taking some calculated risk, but it's also improving the process. By shipping or receiving containers directly through Cleveland, shippers avoid at least two touches."

Cleveland wants to be a two-way valve that allows importers and exporters to bypass more congested coastal ports, and tap directly into the U.S. hinterland. For Midwest shippers, the service greatly reduces drayage time and costs. It's also a greener transportation solution. Because Spliethoff has further connections to Russia, Finland, the United Kingdom, Spain, and the Baltic region, among other places, it opens up European markets to U.S. importers and exporters.

“This service can save at least four to five days on door-to-door transit time—for both breakbulk and container,” Gutheil notes. “Transit time for containers moving from Cleveland to Antwerp—all water, port to port—is 12 to 13 days. From New York to Antwerp, transit time is about nine days. But, because of congestion issues on the East Coast, it can take five to 15 days before cargo moves on or off those facilities.”

The new service features a mix of containerized cargo, capital equipment, and breakbulk moving in both directions. Cleveland will be competitive on containerized pricing rates, Gutheil says. For non-containerized freight, cost depends on where product originates, its size, and whether ancillary escorting fees apply. But inland transport costs represent huge opportunities for savings.

Bentonville: A Company Town

The Cleveland-Europe service is likely to become a game changer for the port. More significantly, some envision a broader economic development impact throughout the upper Midwest as regional shippers converge on Cleveland looking for an escape from costly inland drays and coastal congestion. That’s how innovation crosses over and becomes revolutionary.

In Northwest Arkansas, that phenomenon has had more than 50 years to take hold. Tyson Foods was the progenitor in 1931; J.B. Hunt started as a trucking company in 1961, largely hauling poultry and seed; one year later, Sam Walton parlayed the five-and-dime retail concept into a big-box bonanza. An enduring synergy and collective legacy exists among these three companies. Walmart’s global clout and perennial presence atop the Fortune 500 list make it the obvious focal point for the region. And for good reason.

Bentonville is a company town. It just so happens that company is the largest retailer in the world, with 11,000 stores, 2.2 million employees, and $466 billion in sales in 2013. But you wouldn’t know it seeing the “everyday low price” home office up close and personal. The big-box retailer practices what it preaches.

Things are different in Bentonville. Walmart suppliers are everywhere you go. On a flight into and out of Northwest Arkansas Regional Airport, you’ll likely run into a representative from Smitty Bee Honey, Hallmark, or any of the 1,400 vendors that maintain staff in the city. It’s a brain trust of brands.

Given the U.S. Southeast’s population growth, some vendors are even thinking about locating regional headquarters in Bentonville because they already have boots on the ground.

When you consider the facility this affords Walmart—being able to counsel business partners on new initiatives at a moment’s notice, or, better still, share R&D inputs and innovate—it’s a remarkable advantage.

In some ways, Bentonville is a laboratory of sorts. The big-box retailer recently opened its beta Walmart To Go express store. The gas station-convenience store format is tethered to a Walmart Supercenter across the road—in effect, inventory is replenished through the brick-and-mortar channel. It’s the latest innovation in omni-channel management.

Some suppliers are naturally worried about the new SKU requirements for smaller formats such as Walmart To Go, explains Terry Esper, associate professor at the University of Arkansas. What better way to ease those concerns than to offer a real-world working model to prod and poke?

The Port of Cleveland’s innovative Cleveland-Europe Express is the only direct, scheduled vessel service moving containerized and non-containerized cargo between the Great Lakes and Europe, through the Port of Antwerp.

If that doesn't suffice, the university has its own retail lab, set up in a warehouse on the outskirts of the city. It's where theater meets retail in a mock setup of what different store formats look like, replete with stocked shelves and a working backroom. Students can study consumer behavior, as well as new replenishment strategies and technologies.

Site Selection Tipping Point

By many measures, economic development can be a staid enterprise, fixated on location and costs. Being a center for innovation is a soft sell—merchandising for the real buy. For larger markets with dense populations and transportation infrastructure, value is often entrenched. Critical mass, whether people or freight, is the ultimate magnet.

Still, intangibles such as entrepreneurism can't be so easily overlooked—especially as the United States looks to stimulate economic recovery by supporting small and medium-sized business growth.

The Port of Cleveland envisions a sea-change shift as Midwestern importers and exporters recognize the value of using the Great Lakes and St. Lawrence Seaway to shorten inland drays and reduce costs.

Walmart's latest entrepreneurial initiative, Walmart To Go, is a gas station and convenience store offering groceries and snacks.

That is the future state for Cleveland—betting on the possibility that moving freight all water between the U.S. hinterland and Europe has an upside. If a U.S. manufacturing renaissance is in the offing, labor unrest at U.S. ports continues, and energy prices drop, that's a risk contingency-minded East and West Coast shippers might strongly consider. Never mind the cost and carbon emissions advantages.

Northwest Arkansas is banking on a different value proposition. The legacies of Walmart, Tyson Foods, and J.B. Hunt—and more recent successes of entrepreneurial-minded startups such as Acumen Brands, CrossFleet, and EcoVet—demonstrate how economic development transcends generations. There is an expectation of success.

The region is also an incubator for supply chain talent. Collaboration between the University of Arkansas and Northwest Arkansas' business community has created a talent pool that is attractive to corporate recruiters.

Cleveland and Northwest Arkansas—second-tier metro areas by most standards—are all about invention and re-invention. How do you take the assets you have—titans of industry and a Great Lake—and spin new wheels of industry? Sometimes it just requires a little creative vision.

LATIN AMERICAN LOGISTICS

THE VIEW TO THE SOUTH

If the U.S. Department of Commerce (DoC) gets its way, more cargo will be flowing south through the Western Hemisphere in the coming years. In January 2014, the DoC launched a program called Look South, designed to encourage more U.S. companies to do business with Central and South America.

Fifty-eight percent of U.S. companies that export product do so to just one country—usually Canada or Mexico, according to Secretary of Commerce Penny Pritzker. But they would do well to extend their gaze farther abroad, she says.

"Now is the time for a Look South initiative to help businesses across the country explore Latin America's expanding markets, learn about emerging opportunities in the region, and tap into federal programs that can help companies sell more products into the region, expanding their bottom line," Pritzker stated when she announced the new program at the World Affairs Council in Los Angeles in January 2014.

If you include Mexico, the United States already does a booming business with Latin America. U.S. businesses exported $226.2 billion worth of goods to its third-largest trading partner in 2013, and imported $280.5 billion worth, according to the U.S. Census Bureau (*see chart, page 74*).

Those numbers significantly outweigh the figures for trade between the United States and the massive territory stretching

Opportunities abound for U.S. companies selling in and sourcing from Latin America. But trade can be tricky. Partnering with experienced logistics and transportation service providers is often the way to go.

from Guatemala to southernmost Chile and Argentina. In 2013, U.S. exports to Central and South America totaled $184.3 billion, and imports totaled $158.4 billion, according to U.S. Census Bureau data.

No matter which region of Latin America a U.S. company has in its sights, opportunities abound for both selling and sourcing—and plenty of logistics and transportation service providers stand ready to smooth the way.

Miami-based Ryder System has been serving the demand for logistics services in Mexico—and across the U.S.-Mexico border—since 1994. As trade between the two countries heats up even further, Ryder is expanding to meet that growth.

Ryder's largest Mexican presence is in Mexico City, Monterrey, and Guadalajara. "But we also maintain significant operations across border towns," says Gene Sevilla, Ryder's vice president of international supply chain solutions. Those operations include facilities that help bring freight in and out of Mexico through Tijuana, Ciudad Juárez, and Nuevo Laredo, plus several smaller crossings.

The company has also planted its flag in several spots in the area known as El Bajío, at the geographic center of Mexico. Those locations include Querétaro, San Luis Potosí, Celaya, Salamanca, and Silao.

Within Mexico, Ryder provides warehousing—including value-added services such as labeling and kitting—and transportation management services. In addition, it manages cross-border loads that travel between Mexico and both the United States and Canada.

"We also offer line-feeding services for manufacturing plants in Mexico, managing and feeding inbound raw materials to the assembly line according to a production schedule," Sevilla says.

For automotive plants in Mexico, Ryder provides a yard management and rail switching service. "We handle all the rail operations inside those manufacturing complexes," Sevilla says. "We also handle new cars as they come off the assembly line. Ryder checks those vehicles for quality, then parks them in a storage yard. When the vehicles are sold, we either turn them over to local carriers who move them to dealerships in Mexico, or load them onto rail cars for export, primarily to the United States."

The automotive industry has long been a major driver of Ryder's business in Mexico. Aerospace and industrial products are mainstays as well, but lately, Ryder has been handling a wider variety of cargo.

"We are working to expand our presence in other industries," says Sevilla. "The new areas of focus are consumer products, retail, and high-tech."

Among Ryder's emerging services in Mexico is a crossdocking and transloading operation in the Port of Altamira, near the city of Tampico. This is in addition to the new operation in Celaya, and a crossdock in Culiacán.

"Ryder is continuing to expand its geographic coverage in Mexico," Sevilla says. "Some of these are small operations, but they have a big impact on our ability to serve shippers, because they allow us to provide reach to more locations at lower costs."

Growing interest in nearshoring—the practice of making products close to U.S. markets, rather than in Asia—is increasing demand for logistics services within Mexico and across the Mexico-U.S. border. "Because labor costs in Asia are increasing more dramatically than in the United States or Mexico, the advantage of manufacturing in Asia is eroding," Sevilla says.

To better accommodate the growing number of foreign companies opening plants in Mexico, the nation has gone on an upgrade spree. "We see the promise of infrastructure improvements at all levels, from the rail industry to highways to telecommunications," Sevilla says. "The Mexican government is investing significantly in all the elements required for effective and efficient logistics operations."

For example, in April 2014, Alejandro Fernández Campillo, general-director of highway conservation in Mexico's Secretariat of Communications and Transportation (SCT), announced that Mexico would spend 65 billion pesos ($5 billion) in 2014 on highway construction, modernization, and conservation.

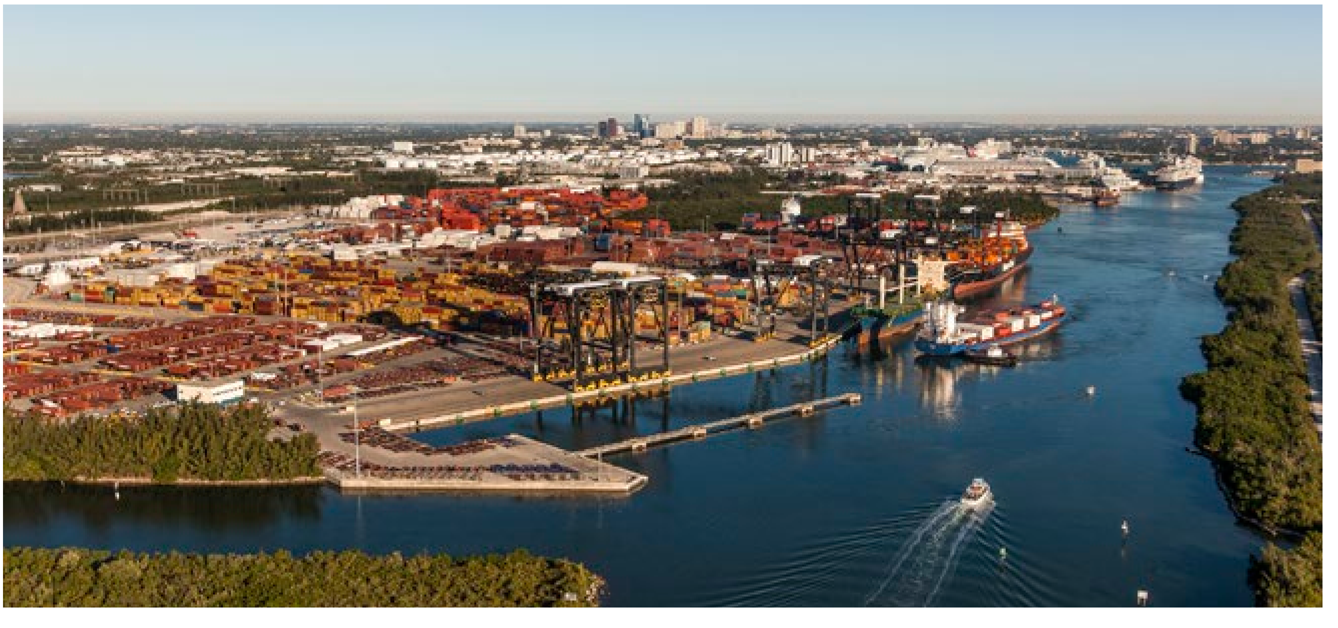
Such projects are good news for shippers trying to more efficiently move goods within Mexico. "All these infrastructure investments tend to hold down costs, and that is crucial for our customers and for the logistics sector in general," Sevilla says.

Brazil and Beyond

For clients of international third-party logistics company Agility, one big story in Latin America is the growing need for industrial products, including components, finished goods, and manufacturing equipment.

Much of that demand comes from Brazil. To help serve it, Agility operates a 110,000-square-foot warehouse in Miami. "We send freight from suppliers in different parts of the United States to Miami, consolidate it into containers, and export them by ocean or air to Brazil," says Nevino Rocco,

Port Everglades has established itself as Florida's leading seaport for containerized cargo. The port is an attractive hub and point of entry for companies that conduct business in Central and South America.



Rail Terminal

OPENS IN JULY

TAKE THE FASTER TRACK TO MARKET

Florida East Coast Railway (FEC) and Port Everglades have joined forces to boost your speed and efficiency to market with pier-to-ramp intermodal service starting in 2014. Discharge your cargo in Port Everglades, then load right onto rail. No traffic. No trucks. No downtime. We move your goods to and from Atlanta, Charlotte, Memphis, Nashville and other points nationwide – fast. Discover the profitable new power of ship-to-rail service through Port Everglades. Visit our website at **www.fecrwy.com** or call David Banfield, FEC Director of Sales and Port Development, at 305-889-5586.

FEC Florida East Coast RAILWAY

PORT EVERGLADES BROWARD COUNTY, FLORIDA
South Florida's Powerhouse Port

vice president of sales and marketing at Agility Americas.

Traditionally, U.S. companies have shipped those goods from U.S. plants, or from U.S. warehouses that received product from contract manufacturers in Asia. But business in Brazil has increased so much that many U.S. firms now ship there directly from their Asian manufacturing sites.

In a change from past practices, many airlines now service Latin America directly from China, Hong Kong, Thailand, Taiwan, and Japan, says Jaan Roots, Agility's director of trade lanes for Latin America. "Ten years ago, the air carriers would service the United States, then we would operate transshipment programs to get the freight to Latin America. That segment of our business is almost non-existent now."

Agility does handle intermodal transshipments, however—for example, freight that travels by sea from Asia to Los Angeles, then by truck to Miami, and by air to South America.

Most of the freight Agility manages in the Americas trade moves southbound from North America. "To a certain degree, Latin America is still an exporter of commodities, such as coal, oil, and grain," says Roots.

Companies shipping those products tend to work directly with carriers, rather than with third-party logistics partners. In the Americas, Agility mainly handles manufactured goods, such as chemicals, pharmaceuticals, and high-tech products.

Airfreight Fright

Capacity is plentiful for U.S. products moving to Latin America on the water, but air freight poses more of a challenge, says Roots. The problem doesn't lie with passenger airlines that also carry freight; those maintain regular schedules and tend to leave on time. But some all-cargo airlines can be less reliable.

"We contend with airlines that cancel a flight, then use the plane to go to a different destination where they can get return loads," Roots says.

The biggest obstacle U.S. companies face in shipping to Latin America, however, is the need to meet complex documentation requirements. "Even countries operating under free trade agreements generate a lot of red tape," Roots says.

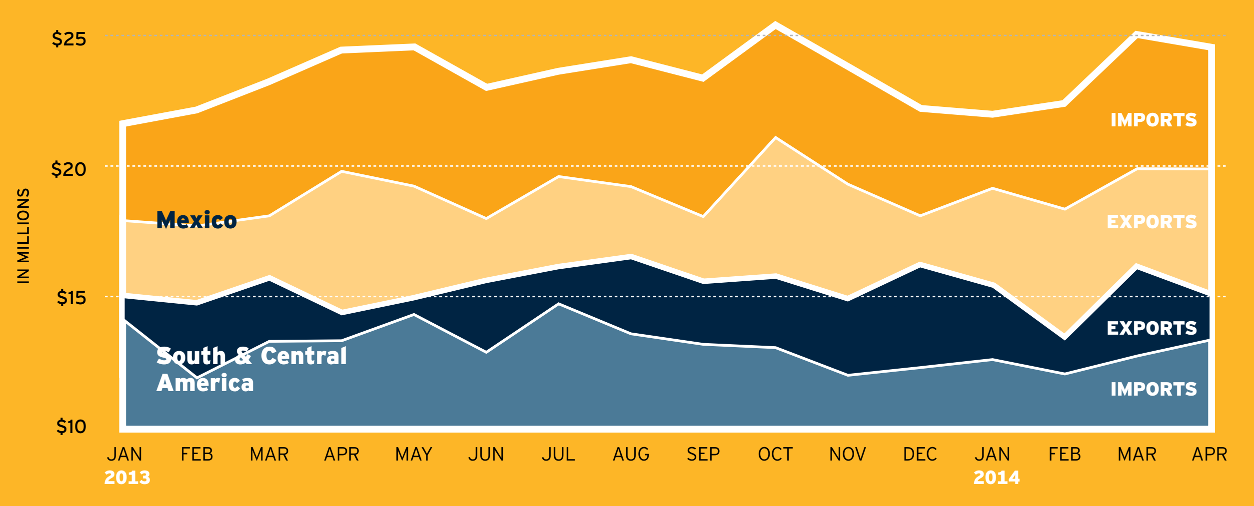
Regulations vary widely from country to country, and authorities sometimes change their minds about requirements at the last minute. "It's important to double-check documentation requirements prior to shipment," says Roots. To deal with this challenge, and move freight efficiently into Latin America, it pays to have an office or reliable local partner in each destination country, he says.

Agility maintains its own operations in Brazil, Mexico, Peru, and Chile, and might soon open an office in Colombia. "In other countries, we rely on our active strategic partners," Roots notes.

As trade between the United States and Latin America continues to grow, Port Everglades, in Fort Lauderdale, Fla., is working hard to match it with increased capacity. Ocean carriers at Port Everglades currently provide service to Panama, Venezuela, Colombia, Guatemala,

Booming Business: U.S. Trade with Latin America

Mexico leads the way as the United States' top trading partner in Latin America. Other parts of the region represent expansion opportunities for U.S. businesses.



Note: All figures are in millions of U.S. dollars on a nominal basis, not seasonally adjusted unless otherwise specified. Details may not equal totals due to rounding. Source: U.S. Census Bureau

Honduras, Costa Rica, Brazil, Argentina, Peru, and Chile.

"In 2013, Port Everglades was number one in containerized trade with Latin America, with more than 400,000 TEUs, according to Port Import/Export Reporting Service data," says Steven Cernak, chief executive and port director at Port Everglades.

Exports from the United States to Latin America outweigh imports only slightly, at 52 percent and 48 percent, respectively. Companies that use Port Everglades to move containerized goods north and south within the hemisphere ship everything from produce, paper, and apparel to machinery, medical equipment, and auto parts. Tankers also use the port to move petroleum within the hemisphere.

Producing a New Commodity

Produce from Latin America could soon become an even more important commodity at Port Everglades, based on the success of a pilot program conducted by the Florida Perishable Trade Coalition. In October 2013, this group of businesses and government agencies, including the U.S. Department of Agriculture, started testing the concept of importing perishable fruit to the United States through South Florida ports.

To date, U.S. law has required such cargo to use ports above the 39th parallel, such as Philadelphia, due to concern about fruit flies and other insects that might threaten southern crops. That led to some circuitous routing—for example, for fruit from South America bound for markets in Florida.

"As new technologies become available, and as business reasons have changed over the years, it has become time to revisit and adjust those rules as necessary," Cernak says. So far, the program has imported grapes and blueberries from Uruguay and Peru through Port Everglades without any problem.

"The coalition will be expanding the program into 2015," he adds.

Port Everglades has ramped up its marketing efforts to encourage even more trade with Latin America. "We're also helping existing customers increase the density in their yards," Cernak says. That means allowing them to fit more containers by stacking them higher.

In addition, the port will accommodate increased trade with Latin America by adding more berths, part of the Southport Turning Notch Extension initiative. The infrastructure project will extend the existing Southport Turning Notch—an area where containerships turn around—from 900 feet to 2,400 feet. With more space, the port can expand the number of berths in that section from one to six.

"We anticipate completing that project by 2017, including the berth construction," Cernak says.

Well before then, companies that import products from, or export to, Latin America will start benefiting from another infrastructure project at Port Everglades: the Intermodal Container Transfer Facility (ICTF). Built under a public/private partnership between the port, the state of Florida, and the Florida East Coast Railway, the new facility will open in July 2014. It will allow companies to transfer containers directly between rail and ship, or ship and rail, without the need for over-the-road drayage to an off-port rail yard.

"It's the only facility of its kind in the United States," Cernak says. "It has both an international cargo gate, so port traffic can go directly onto rail, and a domestic gate, so local manufacturing also has rail access without going through the port complex."

The ICTF will allow shippers direct access to a larger portion of the U.S. population, Cernak says. That's a particular advantage for shippers importing perishables from Latin America. "Cargo discharged at Port Everglades can now reach the hinterlands quickly and efficiently," he notes.

In 2013, exports to the United States' 11 free trade partners in Latin America totaled $12.5 billion more than in the previous year, according to John Larsen, deputy director of the Trade Promotion Coordinating Committee Secretariat at the DoC's International Trade Administration. As ports, 3PLs, and other service providers expand their efforts to facilitate that business, U.S. shippers can take advantage of new opportunities in their trade with nations to the south. ■

To meet growing shipper demand for warehousing, transportation, and other supply chain services, Ryder maintains extensive operations in Mexico, with facilities strategically located in Mexico City, Monterrey, Guadalajara, Ramos Arizpe, Toluca, Silao, Nuevo Laredo, and Ciudad Juárez.

A Joint Advertising Supplement from
Inbound Logistics and *Chemical Week*

CL
Chemical Logistics
06.2014

Delivering Solutions For A Complex Industry

A JOINT ADVERTISING SUPPLEMENT FROM
IHS Chemical Week inbound logistics

Managing Risk and Reward in the Chemical Supply Chain

Chemical manufacturers – and the third-party logistics partners that serve them – tackle enormous challenges to keep the $770-billion industry moving.

From Tupperware to paint, shampoo to lawn care products, even food, chemicals are part of nearly every product lining home and office shelves. In their raw state, the chemicals used to make these everyday products include such diverse materials as corrosives, acids, pesticides, and plastic pellets.

The chemical supply chain comprises these and myriad other products, many of which require special care in handling, transporting, and storing to prevent safety hazards such as combustion, contamination, and spoilage.

The manufacturers, carriers, and third-party logistics (3PL) providers who store and transport these products must adhere to a complex web of ever-changing federal and state regulations aimed at minimizing the hazards for workers and the general public who might be affected if an accident occurs.

Because it is a high-risk business, chemical logistics requires flexibility and adaptability. "The chemical supply chain is long, volatile, and highly complex," says Nathan Buelt, manager of chemical solutions for ChemSolutions, a subsidiary of C.H. Robinson, an Eden Prairie, Minn.-based 3PL. "There are numerous inputs, and many touches to the end consumer."

The array of safety considerations and regulatory follow-through needed to store and transport chemicals makes outsourcing a popular choice for this sector.

"Chemical companies are adept at designing their products and manufacturing safely, while logistics companies offer the expertise required to safely navigate transporting and storing these potentially dangerous products," says Glenn Riggs, senior vice president, North America logistics for Danbury, Conn.-based Odyssey Logistics and Technology, an asset-light company specializing in information and management.

Promoting Core Competencies

3PL providers offer chemical shippers a mix of services ranging from non-asset-based logistics management – which involves helping shippers find the best carriers and managing loads – to operating truck fleets and warehouses.

Keeping all parties focused on what they do best lies at the heart

of chemical logistics outsourcing. “A manufacturer’s core competency is creating and manufacturing product,’” says Sean Strane, vice president for contract logistics services for Jacobson Companies, a Des Moines, Iowa-based 3PL. “A warehousing provider’s core competency is to effectively store, handle, and ship the manufacturer’s product.

“Outsourcing puts the responsibility for recruiting, training, and retaining employees on the logistics provider,” Strane adds. This eases the burden for manufacturers.

Chemical shippers who outsource logistics entrust their 3PL to stay on top of emerging issues that could potentially affect transportation operations, such as new driver regulations, and mitigate ongoing challenges, such as capacity shortages. 3PLs have proprietary processes to prevent improperly storing chemicals, and they screen thousands of carriers to ensure they hire only the best – those with the specific expertise in handling chemical emergencies and adhering to applicable regulations.

A Formula for Savings

Companies may also find it less expensive to outsource, particularly warehousing operations. “If all companies we serve operated their own warehouses, they would have much higher fixed costs,” says Jim Emmerling, senior vice president of business development at Weber Logistics, a Santa Fe Springs, Calif.-based 3PL specializing in serving the western United States.

“Most of our customers arrange transactional pricing,” Emmerling says. “Their costs can vary with the activity levels they are experiencing. When sales are up, transactions are up, and the amount they pay us is likely up. But it’s in scale to their increased revenues. If their revenues go down, their transactions and costs go down.”

Without outsourcing, however, those companies would face fixed warehousing costs that don’t fluctuate in accordance with profits.

“Warehousing infrastructure is expensive to maintain for many reasons,” explains Michael Waring, vice president of operations and customer development at Ontario, Calif.-based Pacific Coast Warehouse Company, a 3PL that operates its own facilities. “Safety and security, regulatory compliance, and structural requirements, such as in-racking sprinklers, all add costs.”

Outsourcing logistics operations to third-party transportation providers gives chemical shippers access to the specialized equipment their products require.

Outsourcing helps shippers navigate challenges such as short lead times, frequent change orders, and high variability, says Tracy Meetre, vice president of supply chain solutions for Logistics Management Solutions (LMS), a St. Louis-based non-asset 3PL. LMS specializes in working with shippers that maintain complex distribution networks – particularly those that transport products using multiple modes and need help consolidating freight or identifying other opportunities to make transportation more efficient.

Capacity Crunch

For small and large chemical shippers alike, outsourcing logistics helps manage challenges and identify new opportunities. Manufacturers and logistics professionals in all industries are grappling with capacity issues affecting the supply chain.

Tight capacity has left some shippers with too few transportation and warehousing options for processing the volume of product pouring into the market. These capacity issues are of particular concern for the $770-billion chemical industry, which is projected to grow four percent in 2014, according to *Chemical Week*.

Adding pressure to the constraints is a burgeoning natural gas industry – shale oil produced through hydraulic fracturing, also known as fracking. The growing sector is

absorbing capacity, overloading an infrastructure still catching up from a recession-induced pause. Throw into the mix increasing government regulations, and you get a sense of the challenges facing chemical shippers.

Consider driver capacity issues. High turnover industry-wide, and an aging workforce, have reduced the number of truckers on the road. The average age of truckers is 47, according to the Bureau of Labor Statistics, and not enough new drivers are entering the industry to replace those who are retiring.

Chemical shipment drivers are more experienced and skilled, and must pass rigorous background checks, undergo federally certified training, and complete in-house training with the company they work for. Not all drivers meet these high standards, leaving the chemical vertical with a very small slice of a dwindling pie of available drivers.

Despite industry-wide turnover, carriers and 3PLs work to minimize churn. "Recruiting and training new drivers is expensive," says Earnie Seibert, vice president of sales and marketing for Dupré. "3PLs and carriers have to ensure employees are up to speed on proper procedures."

A&R Logistics serves domestic and international shippers of bulk plastic, as well as dry, flowable, and liquid commodities.

Meanwhile, truck driver turnover hovered above 90 percent in the fourth quarter of 2013, although 2012 and 2013 saw rates as high as 98 percent, according to the American Trucking Associations. Turnover exposes the supply chain to risk, which 3PL providers must work to mitigate – particularly in chemical logistics, which requires specialized drivers.

"Companies don't hire average drivers for chemical operations – they require a higher grade," says Jim Barnett, vice president of operations for Lafayette, La.-based Dupré Logistics, an asset-based logistics provider.

Meanwhile, drivers are able to cherry-pick the types of work they want to do. "Many drivers would choose to haul a less-dangerous product than chemicals," Seibert says. "Employers must provide incentives for dealing with this complex, difficult environment."

The Hours-of-Service Impact

Additional regulations coming down the line could shrink the number of available drivers even further. A big change came in 2013 when the Federal Motor Carrier Safety Administration (FMCSA) issued Hours-of-Service (HOS) regulations limiting the number of hours a driver can spend behind the wheel.

The rules cap driving time to 11 hours, and work days to 14 hours. The Department of Transportation (DOT) says the changes impact only the most extreme schedules – about 15 percent of all drivers.

Mike Hogan, vice president of sales and marketing at Elgin, Ill.-based transportation and warehousing provider A&R Logistics, says the HOS rules resulted in a six-percent productivity drop at A&R, although the 3PL's safety rating increased. "In theory, we have to hire six to 10 percent more drivers," he says.

For many carriers, the HOS rules have both positive and negative aspects. "We support the new limits because they promote safety on the roads," Meetre says. "But they also affect our ability to recruit drivers, some of whom view the rules as the government's attempt to limit their ability to make money."

The federal rules could also lead to new technology – electronic logging devices (ELD) – being installed in trucks. The logs track hours for each driver, monitoring time behind the wheel and at rest to ensure compliance with the HOS rules. Historically, those hours have been recorded in a logbook, but that method is being left behind as some companies, including A&R Transport, adopt the new technology.

ELDs: Intrusive or Efficient?

A new sweeping federal transportation bill, Moving Ahead for Progress in the 21st Century, could mandate the use of ELDs. This possibility generates mixed reactions from drivers.

"Some drivers who were drawn to the field because it allows them to be independent view ELDs as intrusive," Riggs says. "Other drivers appreciate that they no longer have to deal with

the hassle of keeping a paper log."

While driver shortage issues impact all logistics operations, other regulations directly affect chemical shipments. In 2011, FMCSA passed new rules that changed the definition of a tank vehicle to include intermediate bulk containers, also known as totes, which are used to transport chemicals.

The change requires drivers to apply for tank vehicle endorsements. Originally, states had until July 2014 to comply with the new rule; however, the FMCSA extended the deadline until 2015.

Some states have already implemented the new rules, which has led to inconsistent enforcement. Although the idea behind the regulation – ensuring drivers have appropriate endorsements to promote safety – is sound, the uncertainty of the new regulation's timing and impact is hurting the industry, C.H. Robinson's Buelt says.

"The cost of the endorsement is not the issue – it's the time required to obtain it," Buelt says. "The endorsement may not add significant value for carriers if they can't charge a premium for a certified driver.

"Increased regulation will further tighten the market," he adds.

Working Within Limitations

Shippers will feel the effects of the driver shortage in other ways. "As regulations tighten, the driver pool decreases, resulting in less storage capacity and delayed shipments to end customers," explains Sean O'Laughlin, director of warehouse operations for Jacobson Companies.

Waring agrees. "The cost of transporting chemical goods is rising because there aren't as many qualified DOT/hazmat-compliant transportation companies or drivers."

The tight environment has prompted Dupré to develop stronger partnerships with carriers and its own drivers. "Qualified employees and transportation companies are becoming scarce," Seibert notes. "More chemical shippers are considering longer-term logistics partnerships, and more creative ways to operate differently."

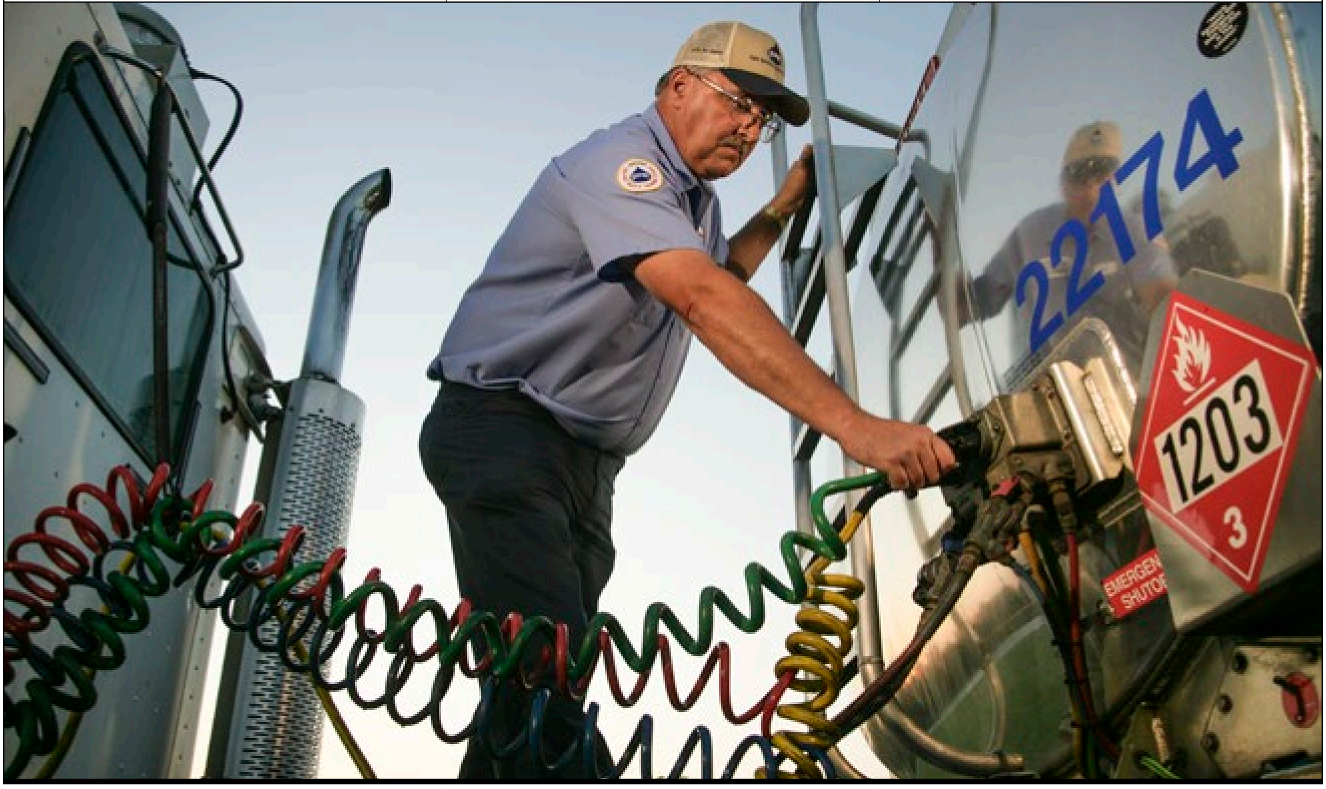
Instead of working with carriers and drivers in a transactional relationship, Seibert says developing partnerships, and focusing on creating good working conditions, can help chemical shippers secure capacity in today's tight market.

"Shippers are learning that providing dedicated business attracts more drivers," Barnett says. "The dedicated environment allows us to recruit more effectively."

Other ways of creating a good work environment include offering hourly wages as opposed to mile- or load-based pay, and incentives based on productivity.

The driver shortage has led some carriers to reexamine scheduling. "All customers want their load delivered Monday morning," says Hogan. "That's physically impossible."

Chemical shipment drivers must pass rigorous background checks and complete federally certified training.



A&R Logistics works with chemical shippers to expand their delivery windows, so instead of expecting deliveries at 7 a.m. each day, shipments might be received later in the day, or even at night.

Even if a company has enough drivers to meet demand, it might not have enough trucks. Chemical shipments often require specialized equipment, and availability can be an issue.

The large investment required to put more trucks on the road – around $250,000 for a tractor-trailer – means businesses will need to make serious investments before the capacity issues abate.

Transportation isn't the only link in the supply chain under strain. Warehouse space suitable for storing chemical products is also at a premium.

"I attribute the tight capacity to three causes," says Rob Kriewaldt, director of client solutions for WSI, an Appleton, Wisc.-based logistics provider. "First, construction virtually stopped in 2008 because of the recession. It is just now starting to pick up, but investors are still cautious." Recently, industrial real estate absorption has been occurring at two to three times the rate of construction nationally.

Second, regional U.S. economic growth is creating scarcity in certain areas. For example, the booming Houston energy market is consuming capacity there, with industrial real estate being used to store products made from oil and natural gas, or other inputs associated with the process. Despite limited local warehouse availability, the demand is higher than ever, creating an industrial vacancy rate of about five percent. Demand is finally driving a large amount of new construction in this market, but space will remain tight for some time.

> *"Chemical shippers are considering longer-term logistics partnerships, and more creative ways to operate differently."*
>
> – ***Earnie Seibert,*** *Dupré Logistics*

"Finally, abundant energy has fueled a huge resurgence in manufacturing in the United States, especially in the Midwest," Kriewaldt says. Products such as industrial machinery, iron castings, and car parts are consuming warehouse space, putting capacity at a premium. Increasing numbers of new chemical plants are taking advantage of affordable energy.

"For the first time in years, manufacturers are growing their domestic production volumes and reducing imports," says Rick McIlveen, vice president of business development for Jacobson Companies. "This is creating a need for more warehouse space, and the supply of ready-to-use buildings is tight – especially buildings already retrofitted to store chemicals. Lease rates and term requirements are starting to climb.

"Warehouse capacity shortages are caused, in part, by developers' reluctance to build on speculation of future need, and, in some cases, an inability to secure financing," McIlveen adds.

Feeling the Pinch

In areas such as Houston, on the edge of South Texas' Eagle Ford Shale, petrochemical has tapped out available space. But Los Angeles and other commerce centers are also feeling the pinch. "The Los Angeles warehousing market is very tight," Kriewaldt says. "New construction hasn't caught up with demand yet."

When the economy first started to rebound, construction was delayed until available space was absorbed. In robust economies such as Houston, real estate developers were taken by surprise when the energy market quickly surged. New buildings take 18 to 24 months to

Petrochemical industry growth has generated significant transportation demand, creating capacity shortages in other sectors.

complete, and the lag time has made warehouse space difficult to find.

In Houston, for example, less than three million square feet are under construction in a market that has more than one billion square feet already occupied. Nationally, warehouse availability is approaching 10 percent, down from a peak of more than 14 percent at the height of the recession.

"Accommodating growth is our major challenge right now," Waring says. "The demand exists, but finding facilities suitable for storing chemical products is difficult, because many facilities must be retrofitted or custom-built to handle chemical goods."

Warehouse capacity in the chemical industry is even more complex than in other industries. "Available buildings that have all the appropriate hazard classifications are rare," says John Rantz, a distribution center manager for Weber. "It is even harder to do a complete startup of a chemical facility in California, because it is difficult to get the necessary permits. And if you locate an existing facility with enough space, completing all the required modifications is expensive."

Energy Boom Fuels Growth

One factor that has greatly impacted the chemical supply chain in recent years is the shale oil market. Since 2010, more than $100 billion in U.S. shale-related chemical manufacturing investment has been planned, according to the American Chemistry Council (ACC).

Much of this investment lies along the Gulf Coast, with South Texas' Eagle Ford Shale region projected to yield more than seven million cubic feet of gas per day in July 2014, according to the U.S. Energy Information Administration (EIA). By 2040, shale gas will account for 50 percent of domestic natural gas production, EIA predicts.

"Shale gas is a game changer for the chemistry industry," reported the ACC in a written statement to the U.S. Senate Committee on Commerce, Science, and Transportation. "It holds the promise of a renaissance of chemical manufacturing in the United States, and will dramatically improve our competitiveness globally."

Although it may help promote U.S. economic growth, the boon is a significant factor in constricting transportation capacity, with shale oil and fracking materials consuming space in rail cars and tank trucks, as well as attracting drivers.

"Transportation capacity is the biggest issue currently impacting chemical logistics," says Mike Skinner, vice president of ChemLogix, a Blue Bell, Pa.-based 3PL. "Rail car capacity is being consumed by materials going in and coming out of the expanding fracking industry."

Shale product that can't fit on the rails moves on bulk tank trucks. Space is limited, however, because bulk trucks are also being used to move products related to fracking.

At Weber Logistics' 300,000-square-foot chemical warehouse facility in Southern California, maintaining the correct temperature in each zone helps ensure products are stored safely.

Increased output due to lower energy prices, combined with equipment and driver shortages, has resulted in a difficult squeeze.

The rebounding U.S. economy and growing petrochemical market are forcing chemical shippers and logistics providers to get creative, says Kriewaldt. During the recession, companies stopped building rail cars because of a lack of demand for additional capacity.

As the economy picked up, manufacturing resumed. The long lead time for rail cars, however, makes it difficult to keep pace with demand, especially for the specialty equipment needed to ship chemicals. As a result, transportation costs are rising.

"In 2009, you could lease a tanker car to haul petrochemical products for $500 per month," Kriewaldt says. "In May 2014, prices hovered around $2,400 per month to lease a car. That's a good indication of rail car demand."

The higher prices are not only inflating costs overall, but also pushing companies to turn cars around faster. The amount of time it takes to unload a car and return it to the plant isn't fixed, so companies are focusing on what they can change.

"It comes down to working extra hours and shifts," Kriewaldt says. "Companies have extended their receiving hours to expand capacity without an increased number of tanks."

A locomotive shortage is also a factor. The railroads have been using the power units to move petroleum, rather than grain and fertilizer, to the detriment of U.S. and Canadian farmers.

Regulations for Rail

Because shale production growth is relatively new, state and federal regulations are still taking shape – particularly related to transportation, in the aftermath of several high-profile accidents.

In 2013, a train carrying tank cars full of oil from North Dakota's Bakken Oil Field derailed in Quebec and exploded. After the crash, Canada announced orders to phase out or retrofit older rail cars classified as DOT-111 – a type that is particularly vulnerable to damage during a crash – by 2017.

Intermodal solutions offer chemical shippers an opportunity to cut transportation costs.

"The accidents prompted a review of existing rail car infrastructure," Riggs says.

While a boon to safety, phasing out older cars will strain capacity even more.

While big changes in rail transportation of oil and natural gas may be coming, overall usage of rail combined with trucks is on the rise.

Intermodal Leads the Way

Improved infrastructure has boosted the use of intermodal in chemical logistics, with the mix of rail and truck reducing carbon footprints and easing capacity issues.

"Intermodal transport is growing in popularity," Riggs says. "It reduces the number of trucks on the highway, and it's greener."

With nearly 25 million containers moved annually, intermodal's growth rates outpace those of all other transportation modes, according to the Intermodal Association of North America. Domestic intermodal container volume has doubled in the past 10 years.

Although infrastructure has improved, speed is still a factor for companies opting to combine transportation modes. "Intermodal generally takes longer, so transit times are an important service factor," Riggs says. "Some operations can't accept adding an extra day or two to their schedule."

If companies can afford the extra time, however, using rail for a portion of the journey can reduce shipping costs from 15 to 40 percent, according to a Weber Logistics whitepaper.

Safe and Secure From Start to End

Complex safety needs impact every facet of chemical warehouses, from design to operation. When shipments arrive at the warehouse, workers verify each product's stock-keeping unit number, then confirm that the correct hazards are listed.

Each chemical carries unique storage requirements, so safety protocols and conditions vary from product to product. For example, some chemicals must be stored in temperature-controlled rooms, while others shouldn't be stored next to one another because the vapors can interact and cause problems such as harmful fumes.

"We review every potential chemical customer's safety data sheet to ensure the hazards indicated are suitable for our systems and facility," Weber's Emmerling says.

Weber's 220,000-square-foot Southern California chemical warehouse facility includes 13 storage rooms with temperatures ranging from 45 to 90 degrees. Maintaining the proper temperature is critical. "If temperature control is breached, the product may be compromised," Emmerling says.

To mitigate risk from spills, the rooms are cordoned off by ramps that act as dikes to contain spills or

water used in fighting a fire. In-rack sprinkler systems also help to quickly diffuse any incidents.

Pacific Coast Warehouse Company's 75,000-square-foot Chino, Calif., facility stores chemicals including flammables, poisons, and aerosols, among others. The rooms are separated by several automatic closing fire-rated doors, and floor-to-ceiling aerosol cages. All staff, including janitors, customer service representatives, and managers undergo routine training sessions. In addition to the training, flowcharts located throughout the warehouse spell out the protocol to follow if a spill occurs.

Chemical warehouses also use special equipment, including EE-rated forklifts, which are spark-proof to protect against fire. "All of the electronic components are housed separately," Waring explains.

Authorized Personnel Only

Tracking who has access to the facility represents an important component of product safety. "Check-in and check-out procedures are in place," Waring says. "When a driver arrives for a pickup or delivery, we use an identification verification process to authenticate the purchase orders or delivery numbers." Warehouse staff also check driver identification before they load or unload product onto the trailer.

Safety precautions continue on the road. Trucks must be labeled accurately with the type of chemical being transported, and the level of hazard associated with it. "If an accident occurs, drivers need to know what they are dealing with – for example, whether there is a safety issue if, say, a gallon of material escapes," says Riggs. "The labeling is critical."

To demonstrate their commitment to safely storing and transporting chemicals, many 3PLs have joined the Responsible Care initiative, an industry program launched in Canada in 1988. The ACC oversees the U.S. portion of the program.

Belonging to Responsible Care helps ensure logistics providers' processes are aligned with both clients – many of whom belong to the ACC – and carriers.

For C.H. Robinson, adhering to the standardized protocols affirms communication between its ChemSolutions division, carriers, and shippers so all parties know exactly the types of chemicals in transit, and the precautions needed to ensure safety.

"The program conveys trust that we're accurately communicating shipment requirements," Buelt says.

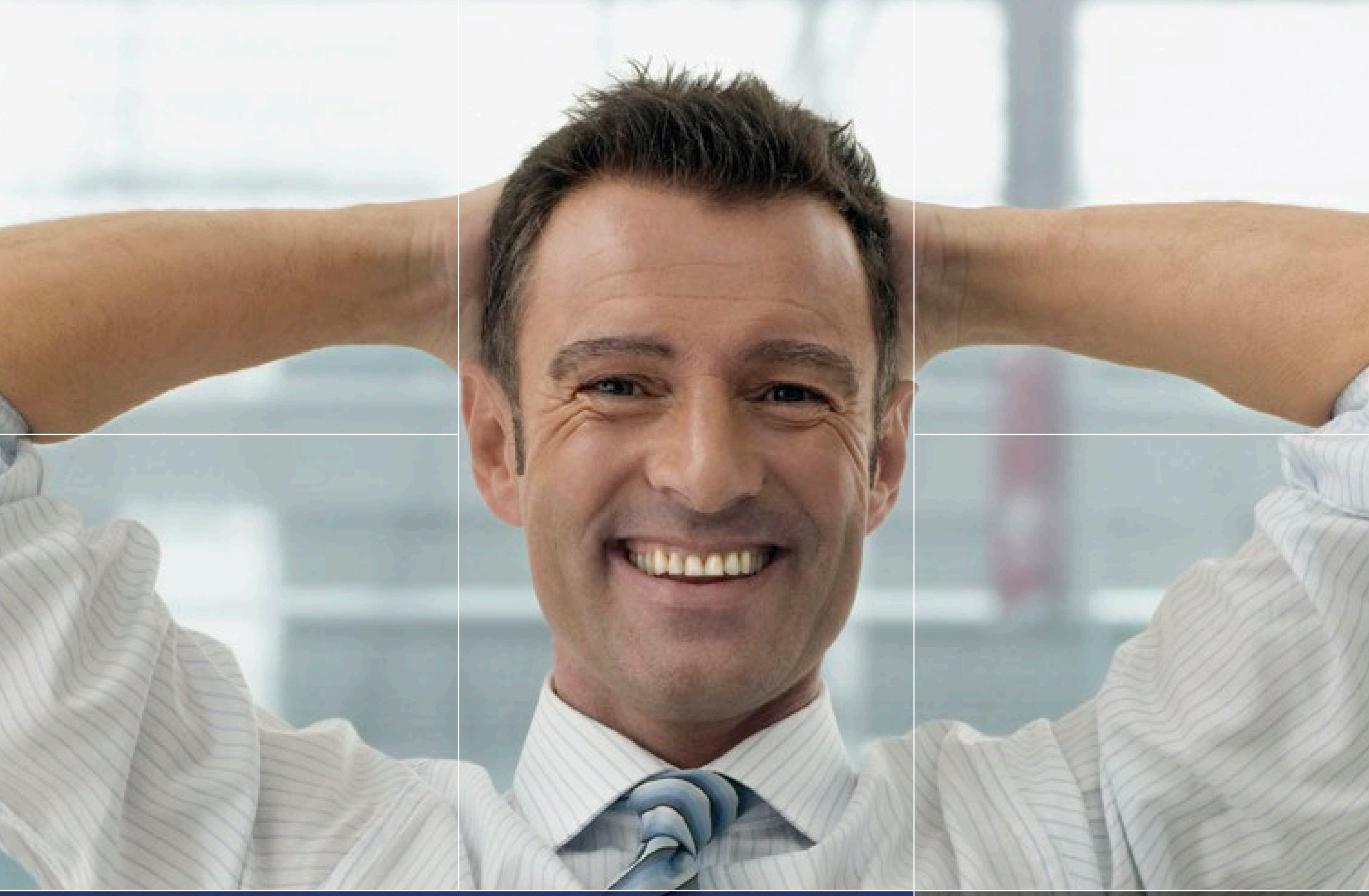
LMS also views Responsible Care as an important tool to build confidence. "We're a non-asset-based company," Meetre notes. "But we want chemical shippers to know we take their business just as seriously as they do."

Core methods for ensuring safety include the Plan-Do-Check-Act system, which requires companies to plan for hazards, enact the plans, check progress, and correct any issues. The Act portion requires buy-in from senior management, who are required to review the system and share results with stakeholders.

Responsible Care program participants follow strict protocols to standardize procedures for labeling and handling chemical products, planning for hazards, monitoring processes, and correcting any issues. Periodic audits ensure program compliance.

Participating companies undergo audits to ensure they are adhering to Responsible Care standards.

"LMS customers know our management systems and all of our processes are audited every other year, and they know if an issue arises with any of their shipments, we are required to handle it as they would handle it," Meetre says. "It gives them peace of mind that their provider knows the chemical industry, and is prepared if a problem occurs."



The next evolution underway for Responsible Care is the Product Safety Code, a measure being implemented in phases from 2014 through 2017. The code seeks to heighten safety protocols surrounding chemical production and handling, including transportation and warehousing. For example, participating companies must work to create a culture that values safety and accountability. The ACC provides auditors to check compliance.

Protective Measures

In the wake of the Sept. 11 terrorist attacks, new security measures affecting chemical shippers have been implemented. For example, Congress passed the Chemical Facility Anti-Terrorism Standards (CFATS) to buttress security.

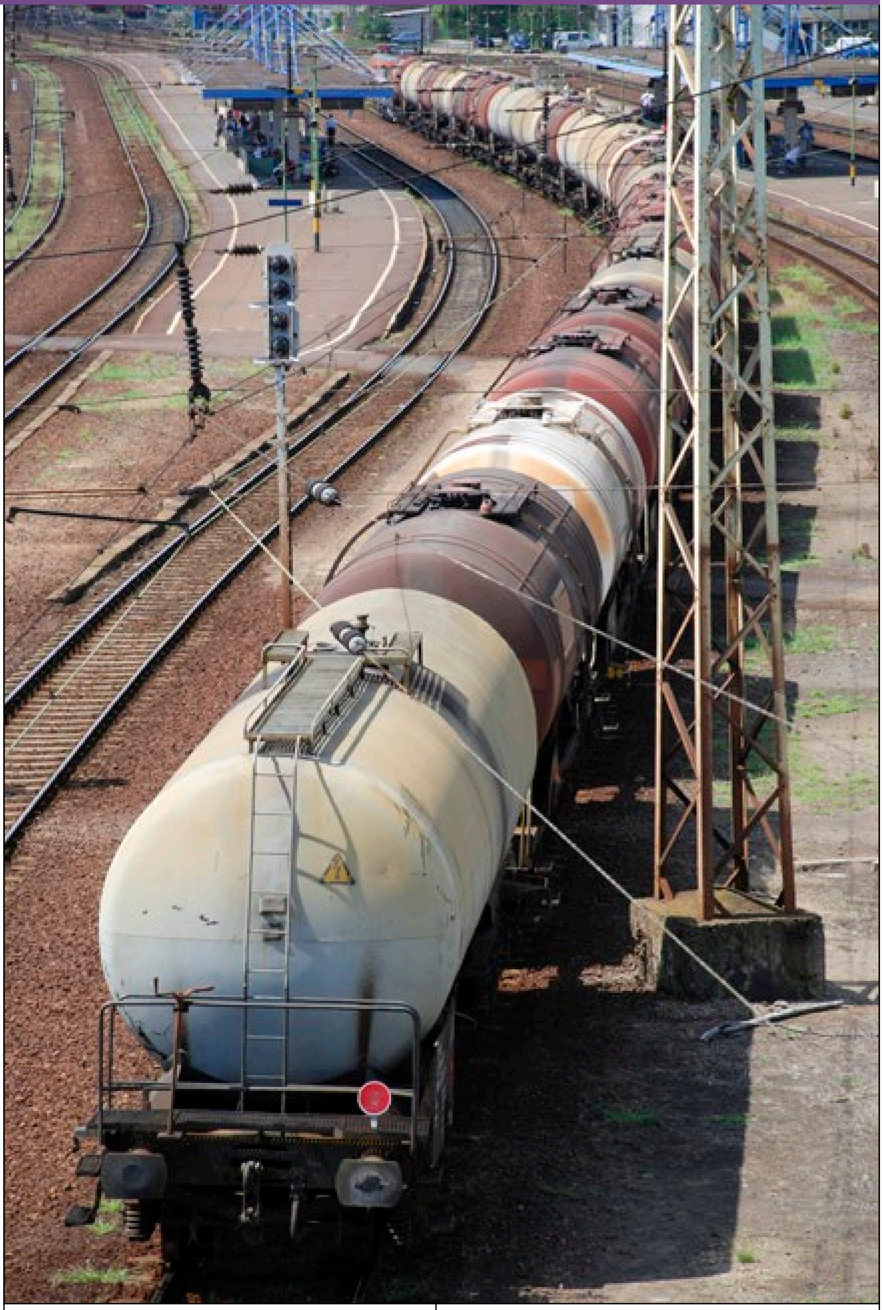
"Different chemicals require differing levels of security based on government and agency requirements," Emmerling says. "Certain chemicals are of interest to various government entities because of the products' characteristics and what they might be used for."

Special protections for sensitive chemicals might include caging them to prevent unauthorized access.

The Department of Homeland Security (DHS) outlines three measures that constitute risk: the severity of consequence if an attack occurs, the vulnerability of a facility to attack, and the level of threat that exists against a facility.

To comply with CFATS, facilities must meet DHS-set performance standards that vary depending on the warehouse. "Security measures that differ from facility to facility mean that each presents a new and unique problem for the adversary to solve," DHS documentation states.

A slew of government agencies in addition to DHS – including the Environmental Protection Agency and the Occupational Safety and Health Administration – oversee chemical production and storage facilities.



Improved rail infrastructure and enhanced safety measures have led many chemical shippers to switch bulk shipments from truck to rail.

"As safety regulations evolve, government agencies continually monitor compliance. Scheduled and unscheduled audits have become common in some parts of the country," says Jacobson's Strane. "Being prepared daily for these types of audits is a necessity. Since 2012, one of our operations has been visited by various compliance agencies more than 20 times."

Managing security issues is all in a day's work for warehouse providers.

Technology Causes a Reaction

The improved technology and tracking abilities that come along with centralized planning systems is


© 2014 C.H. Robinson Worldwide, Inc. All Rights Reserved. www.chrobinson.com
GO TO INBOUNDLOGISTICS.COM
AND VOTE FOR C.H. ROBINSON
AS YOUR TOP 3PL
RESPONSIBLE CARE®
OUR COMMITMENT TO SUSTAINABILITY
1863
3

opening the door to new opportunities for chemical shippers.

"With the increased use of technology to follow shipments in transit, it is no longer a novelty for our orders to be tracked from the time we place them to the moment they are delivered," ChemLogix's Skinner says. The sensitive nature of the materials being shipped makes robust tracking critical.

Benefits of adopting technology include the ability to automate freight execution and payment, receive notifications for important events along the way, and access centralized information, which facilitates tracking.

LMS operates centralized command centers that track the movement of all containers. "Command centers help integrate data, staff, decision-making, and visibility," Meetre says.

In addition to stationing personnel at customer sites around the country, LMS runs a central hub in St. Louis. "The workers who staff that hub review all customer activity to identify opportunities to combine shipments and manage truck capacity," Meetre says.

For example, if a truck is half-full with a load from one company, LMS can fill the rest of the truck with another company's load bound for the same destination, provided the products are compatible.

The practice is particularly helpful in the age of tightened truck capacity. It also lowers a company's shipping costs and reduces its carbon footprint. "This effort requires centralized visibility of client freight throughout North America," Meetre says.

Customers also have the option of using their own transportation management system to take advantage of the information LMS gathers.

"If they're using another system, our planners on-site have the capability to send those shipment opportunities to our collaborative command centers," Meetre says. "It's a holistic, centralized approach to freight management in the chemical industry."

Maintaining inventory visibility allows chemical shippers to respond to time-sensitive orders.

LMS has adopted other techniques to mitigate capacity issues, particularly with regard to refrigerated trucks, needed to securely transport temperature-sensitive materials. To find capacity, LMS has leased a dedicated fleet of refrigerated and hazmat certified trucks, managing the freight while a partner runs the trucks.

For example, Bluestar Silicones, a France-based silicone manufacturing company with U.S. offices in East Brunswick, N.J., frequently needs to ship products from the East Coast to the West Coast.

"We encounter occasional problems sending full truckloads to the West Coast, especially during the agricultural growing season," says David Docherty, North American supply chain and logistics manager for Bluestar Silicones USA. "LMS has been extremely proactive helping us work around those issues."

Can't Stand the Heat

When Bluestar had to move a special type of insulation used on deep-sea pumps from Ventura, Calif., to Houston, the company needed to ensure temperate conditions during transport.

"The product could not exceed 90 degrees, but it had to travel through the U.S. Southwest and New Mexico," Docherty says. "LMS worked with us on getting reefers to ensure the product was kept at the right temperature."

Also of concern was ensuring the shipment didn't idle at a desert rest stop, where the temperature could potentially rise and ruin the product. "LMS employed a team of drivers to ensure the door-to-door move was made uninterrupted," Docherty says. "There was no stopover."

"Managing chemical logistics is all about centralizing freight, optimizing it safely, adhering to all the regulations and equipment requirements, and providing shippers with 100-percent visibility," Meetre says.

LMS also promotes safety by ensuring carriers have acceptable safety ratings and appropriate insurance levels. The company uses a real-time feed to monitor carrier Compliance, Safety, Accountability scores, which weigh factors such as safe driving, vehicle maintenance, and insurance status.

When sensitive, potentially dangerous chemicals are traveling across the supply chain, putting safety first is the only way to do business. CL

LANDING A JOB IN LOGISTICS

IT TAKES A WEALTH OF EXPERIENCE

What do companies value more when hiring logisticians: an academic background or real-world experience in several functions? As the supply chain continues to evolve and change, the answer is increasingly both. BY JOSEPH O'REILLY

Switch on the TV or click through Web ads and you'll quickly see how supply chain management and logistics permeate mainstream media. UPS loves logistics. CSX knows how tomorrow moves. These companies and others have done a laudable job advertising the importance of transportation and technology in today's consumer economy. Supply chain is crossing over to everyone's benefit.

As its visibility grows, supply chain management has inevitably become more sophisticated and disciplined. Commoditized warehousing and transportation are making way for an emphasis on cost reduction and customer service, composing an amalgam of artificial intelligence, assets, and human touch.

Consequently, education is catching up. Students matriculate through undergraduate and post-graduate programs with a specific focus on supply chain and logistics. Curriculum is tailored to unique functionality. This new skillset is much deeper than in generations past.

Such vertical expertise and experience is not unique. Whether it's engineering, medicine, or law, depth of knowledge is valued. But the supply chain brings its own nuances, especially as an emerging sector.

Supply chain management requires agility and adaptation—on-the-fly diagnostics and execution. That's why some corporate recruiters are placing greater emphasis on more diverse academic and work experiences. They are hearkening back to the entrepreneurial spirit of invention and innovation that many transportation and logistics pioneers borrowed from agriculture and manufacturing, then improved on.

As a new generation of supply chain professionals comes on board with more polished credentials than their forebears, companies are looking to tap into the past—into an ethos and ethic that valued experience as much as institutional edification. They want the best of both worlds—in the face of a brave new supply chain.

Toyota Production System: A Whole New Ball Game

In 1978, Taichi Ohno published his seminal work, *Toyota Production System: Beyond Large-scale Production*, which introduced manufacturing and logistics to establish a new way of understanding process flow. By his own admission, Ohno was greatly influenced by Henry Ford's ideas on pull logistics, assembly lines, and vertical integration.

But he also recognized and appreciated some of the nuanced cultural differences that existed between America and Japan in a post-World War society. One of the most important points of contrast was labor.

Like Ford, a farmer's son, Ohno came to automotive manufacturing by way of a different trade. His concept of automation centered on the auto looms at his father's textile plant. He also pulled ideas from supermarket replenishment. So the basic precepts of the Toyota Production System were borrowed and adapted. It serves as a good example for how supply chain best practices continue to disperse across industries.

Ohno emphasized this lateral approach to innovation in terms of developing talent. He wanted production line workers who could perform different tasks, and who didn't exist in functional silos. Job specificity, he believed, was an inefficient use of labor.

"Some say that trade unions in Japan represent a vertically divided society lacking mobility, while function-oriented unions of Europe and America exemplify laterally divided societies with greater mobility," wrote Ohno. "Is this actually so? I don't think so.

"In the American system, a lathe operator is always a lathe operator and a welder is a welder to the end," he continued. "In the Japanese system, an operator has a broad spectrum of skills. He can operate a lathe, handle a drilling machine, and also run a milling machine. He can even perform welding.

"Who is to say which system is better? Since many of the differences come from the history and culture of the two countries, we should look for the merits in both," he added.

Ohno valued labor in the context of teamwork. In fact, throughout his book, he used countless sports metaphors to illustrate the importance of collaboration.

"In baseball, for example, if someone drew boundaries around the infield defense zone, and said only the second

The Toyota Production System exemplifies taking a lateral approach to developing talent. Assembly line workers perform different tasks, and don't operate in functional silos.

baseman could play there, while the third baseman could only play in another designated area, the game would not be as fun to watch," Ohno wrote. "Similarly, at work, things do not necessarily run smoothly just because area of responsibility has been assigned. Teamwork is essential."

By relying on this team approach, and allowing workers the latitude to interchange roles on an assembly line, an organization is better able to react to changes in demand. Further, a more decentralized workforce capable of executing on demand eliminates the most costly waste: time.

"A business should have reflexes that can respond instantly and smoothly to small changes in the plan without having to go to the brain," Ohno wrote. "It is similar to the fluttering reflex action of the eyes when dust is around, or the reflex action of a hand pulling away quickly when it touches something hot."

Moneyball Approach To Recruitment

Today, companies have re-engineered the Toyota Production System and Lean best practices in countless ways. Manufacturing remains core, but that hasn't stopped others from adopting and adapting some of the principles that Ohno inspired, especially when it comes to talent development.

In the service sector, Lean strategy has become a big part of customer relationship management. It gives third-party logistics (3PL) providers and other intermediaries an anchor to deliver value-added capabilities and grow partnerships. With an ethos of continuous improvement, or kaizen, the 3PL proposition has legs to grow. Still, convincing shippers to look at operations through a different lens, with new parameters, can be challenging.

"Shippers are looking to hit home runs, and 3PLs aim to increase on-base percentage," explains Brian Murphy, director, business development at Menlo Worldwide Logistics, a San Francisco-based 3PL. "Those tools in the operational world might create bias toward Lean. Are they using the right kaizens? Are they using value stream mapping when situations arise? How are they attacking problems?"

Menlo stresses the importance of kaizen as it works through various projects with its customers. As a metric, kaizen forces a new outlook for the 3PL, its customers, and employees on both sides tasked with delivering wins. While kaizen often doesn't produce direct cost savings, this analytical approach creates a constant churn that opens new windows of opportunity.

"It demonstrates that we're not letting the water stagnate; we're moving the paddle around," Murphy adds.

> Hiring people with horizontal experience in different logistics functions often provides fresh perspectives and helps create innovative solutions.

This business development tack dictates the type of professionals Menlo recruits. Borrowing from Ohno, baseball metaphors provide an ideal context for understanding.

Murphy compares the way companies look at talent development to sabermetrics—where management uses detailed statistical analysis to find baseball players who may deliver greater value than their visible performance or skillsets may indicate.

In effect, they are trying to bring greater objectivity to recruiting players. The term was coined by statistician Bill James, and popularized by Oakland Athletics general manager Billy Beane in the 1990s, as depicted in the 2011 movie *Moneyball*.

"As we develop our internal talent pool—whether in sales, operations, or human resources—we have to buy into what the organization is trying to accomplish," says Murphy. "With the limited funds he has, Billy Beane's perspective is: 'Do I get Albert Pujols, or can I get five players who buy into our system?'

"Now, there's a reason these players are on the market," he adds. "But if they have the fundamental characteristics that fit with what the team is trying to do to be successful, they can develop the rest."

Because the supply chain is so fluid, and change widespread, Menlo wants logisticians who can problem-solve and execute on the fly. Bringing people in who have horizontal experience in different areas, or building a team with diverse talents, often lends itself to thinking differently. It provides different perspectives, which creates new solutions.

Menlo's Emerging Leaders program, for example, helps employees gain exposure to different areas inside the organization—and outside their comfort zone. This way, people might start thinking about a customer project or problem from human resources, accounting, sales, marketing, finance, or engineering perspectives. When they make recommendations, they can take these other angles into account.

"Organizationally, Menlo tries not to stagnate resources within a specific area," Murphy says. "We want employees to think differently. The only way to do that is by providing experiences in other places.

"Students have a more embedded supply chain pedigree; they know the fundamentals," he adds. "Instead of locking them into their area of expertise, providing a more expansive view is priceless."

Pollinating New Perspectives

Perspective is important for another reason. When people understand how their functional roles impact other areas of the supply chain—especially from personal experience—they gain a greater appreciation for the synergies necessary to optimize performance.

The University of Arkansas Supply Chain Management Research Center is striving to develop this perspective within its curriculum and among local Northwest Arkansas businesses as it prepares students for private sector careers.

This type of sensitivity to other areas

of the supply chain—how transportation impacts inventory management, for example—is an important consideration for supply chain professionals as they grow in their jobs, says Terry Esper, associate professor and executive director for the center.

To point, the University of Arkansas is creating new synergies across industrial engineering, business, and agricultural departments, using supply chain as a platform for greater research collaboration. The idea is to stoke pollination across disciplines, allowing students in one area to work and interact in another.

Chalk it Up to Experience

Not surprisingly, area businesses value the wealth of experience University of Arkansas students possess when they enter the workplace.

"We partnered with the university, and hire a number of new grads in industrial engineering, logistics, and supply chain," explains Greg Primm, vice president of operations, for Fayetteville, Ark.-based e-commerce company Acumen Brands.

"What's interesting is that we use students in different ways—and not always in their field of study," he says. "We can take a process-oriented engineer or supply chain student, and apply that skill to the way we market products."

Acumen's marketing is analytical and data-driven. Whether through online advertising or social media research, it's all about getting the company's brand names and messages in front of the right people. E-commerce success is contingent on being able to integrate marketing with logistics.

"This kind of marketing requires a very analytical role," says Primm. "We have employees with combination degrees—a minor in marketing and a major in supply chain, logistics, or accounting—who first and foremost are analytical, but also understand marketing. They are valuable."

Encouraging more diverse work experiences among supply chain practitioners also serves to organically stimulate professional growth and development. Menlo's Murphy believes that having logisticians move around and learn different roles helps keep them fresh and motivated in their careers.

"Through retention, talent development, and guiding people through the organization, they will emerge as leaders," Murphy says. "They need different challenges."

A company can differentiate itself by giving aspiring employees channels to grow within the enterprise. If it becomes just a matter of financial incentive, someone else will eventually up the ante. Going after the free agent market every year to find talent is difficult to do—and at some point, businesses will get burned.

Companies have to find ways to make sure their employees are always challenged, advises Murphy. Then they have to find the right people to accept those challenges, and make sure they live up to the promise of providing opportunities.

Problem Solvers Wanted

Supply chain innovation may push the envelope regardless. The age of big data is creating new demand for analytical problem-solvers. Whether it's identifying inefficiencies on the warehouse floor, or modeling total logistics costs for a new offshore manufacturer, supply chain practitioners who can quickly engineer solutions under pressure will be in high demand.

"The bigger picture is key," says Primm. "You have to be able to not only pull the data and analyze it, but also make decisions from that information. Everybody at Acumen needs to do that. I'm not going to run the numbers, then lob them over the wall to marketing and see what they think. It has to be collaborative."

Today's reality is that supply chain comprises many minds from different functional areas—mining, farming, manufacturing, retail, transportation, and warehousing. How companies are able to aggregate and leverage this shared knowledge becomes a competitive differentiator. But it's a challenge—one that Ohno presaged decades earlier as industry entered the throes of the digital revolution.

"An 'agricultural' mind at work in the industrial age causes problems. But should we then go to a 'computer' mind in one jump? The answer is no. There should be an 'industrial' mind between the agricultural and computer minds," he wrote.

Today's supply chain mind is no different. It's a composite of skillsets and capabilities, across industries, both old and new. ■

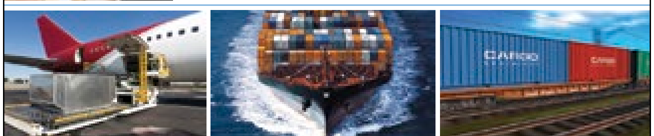
Employers value well-rounded professionals with combination degrees or broad experience in several logistics functions.

In Transportation and Logistics What Separates You from the Competition?

. . . Recognized education and certification in the transportation & logistics industry .

- Certification in Transportation & Logistics (CTL)
- Professional Designation in Logistics & Supply Chain Management (PLS)
- Global Logistics Associate (GLA)

ASTL has the industry credentials that build success in your career pathway.



AMERICAN SOCIETY OF TRANSPORTATION & LOGISTICS

202.580.7270 | www.astl.org

AST&L

IANA

DIRECTOR OF EDUCATION

The Intermodal Association of North America (IANA), a unique trade association representing the combined interests of 1000+ companies that transport over 90% of our country's imports and exports, is seeking a Director of Education. This newly created position will be responsible for developing the content and delivery mechanisms and overseeing the execution of all of the Association's educational programs.

Position requires an undergraduate degree and a detailed understanding of freight transportation and its various stakeholders, as evidenced through a minimum of 4 years of related industry work experience. A key component to the position is the ability to leverage knowledge and contacts to design/deliver content that is relevant and value-added.

PLEASE RESPOND TO careers@intermodal.org

TELEPHONE INQUIRIES WILL NOT BE ACCEPTED.

IANA is an Equal Opportunity Employer

84,000+ ALUMNI = PROVEN SUCCESS

The Leader in Logistics Distance Learning Since 1923

INSTITUTE OF LOGISTICAL MANAGEMENT • SINCE 1923 • ®

"ILM puts the Logic in Logistics."

DETC

8 ACADEMIC AND PROFESSIONAL CAREER TRACKS NOW AVAILABLE!

www.ilm.edu

Casebook | by Justine Brown

Freight Bill Payment: Meeting the Pepsi Challenge

A manual freight bill payment system left Pepsi Logistics flat, so it popped the top on a Web-based solution. Now, lower costs and higher efficiencies are in the can.

When Pepsi Logistics Company Inc. (PLCI) was thirsty for an automated system for billing customers, and processing and paying carrier freight bills, it whet its whistle with *Epay Manager* from Level One Technology.

To understand Plano, Texas-based PLCI's thirst for automation, consider its size and scope. PLCI manages parent company PepsiCo's private fleet, one of the largest in the nation. It also utilizes a network of more than 2,500 carriers to meet the transportation needs of a variety of suppliers, manufacturing sites, and affiliates.

PLCI doubled its customer base during 2013, but that growth also had a downside. The company's manual systems for processing and paying carrier invoices, and billing customers, were increasingly cumbersome and time-consuming.

"When Pepsi Logistics Company launched, we handled paper invoices manually," recalls Adrianne Merritt, PLCI's senior finance manager. "Carriers mailed the invoices, and we processed them by hand, and entered the data into a spreadsheet. Then we mailed the bills to the person responsible for processing payment."

PLCI's labor-intensive invoicing process translated into inefficiency and high costs. Multiple personnel had to resolve disputes, which pushed costs even higher. To solve this problem, and enable growth as demand increased, PLCI sought to automate the invoice and settlement processes for its U.S. and Canada-based carriers, and better facilitate procurement and reporting functions.

"We wanted a system that would provide the flexibility of paperless invoicing with quick pay options, but we also needed software that was user-friendly for customers and carriers," says Adrian

Parkhideh, PLCI systems resource manager. "And, we wanted a partner that was open to data sharing, and flexible on the back end."

After examining a number of potential solutions, the company selected *Epay Manager*, an electronic payment processing system from Maryland Heights, Mo.-based Level One Technologies Inc. "We evaluated four other solutions, but none of them fit the bill for the functionality we needed," says Parkhideh. "*Epay Manager* had the portfolio we were looking for."

Streamlining Invoice Exchange

Epay Manager is a Web-based application that integrates with transportation providers' management and accounting systems to facilitate and streamline electronic invoice and payment exchange among intermediaries, carriers, and shippers. The solution is an outgrowth of another venture Level One Technologies started more than 14 years ago, and has taken a while to catch on.

"We were originally looking to design Web-based software that supported the transportation industry, but in 1999 that was difficult," explains Tom Whaley, president of Level One Technologies. "At that time, we wanted to exchange data between offices that weren't connected to one another. The existing technology and infrastructure was rudimentary, and didn't provide the outreach we were looking for."

But the financial crisis of 2008, combined with rapidly maturing technology, provided Level One with the window of opportunity it needed. Following the economic downturn, carriers faced challenging financial times, which created demand for a solution such as *Epay Manager*.

"During the financial collapse, many banks, lenders, and other trucking company financers suddenly began to withdraw or reduce their lines of credit," says Whaley. "Many carriers suffered, because they were totally reliant on cash flow. In effect, their customers became the sole source of working capital.

"Despite these changes, carriers still needed to balance their revenue, because payments came due for regular operating expenses, such as fuel and insurance," he adds. "Under these conditions, if carriers weren't paid on time, they ran a high risk of becoming insolvent or being forced out of business."

Transportation intermediaries and shippers realized they needed to pay carriers more quickly. "They also found that being more efficient, and eliminating the traditionally slow process of using mail to send invoices and receive checks, could be a huge improvement," explains Whaley. "Most importantly, they discovered that simplifying their systems, and offering easier and faster ways to be paid, would cause carriers to flock to them because they provided cash flow certainty."

That proved to be true with the shippers and third parties who use *Epay Manager*. That's because their carriers know the specific dates a payment will be credited to their account, and never have to guess when an invoice will be approved for payment, or when a check will arrive in the mail.

"*Epay Manager* gives carriers better control over when they're paid, and they gravitate to companies that not only understand their financial challenges, but also offer real-world solutions," says Whaley. "Strong bonds form between brokers and carriers when early payment options are introduced and used to incentivize carriers to remain loyal."

Level One Technologies originally designed *Epay Manager* to help small businesses compete with larger companies. But larger companies were attracted to the lower processing costs and improved efficiency the solution delivered. This was true for PLCI, which contracted with Level One Technologies in fall 2012.

The *Epay Manager* network enables Pepsi Logistics Company to pay truckers quickly and accurately through electronic invoice exchange, and direct deposits to carrier accounts.

"We hit the ground running," says Parkhideh. "Collaborating with Level One, we developed a plan for how the process would work and what it would look like. Our overall goal included automating accounts receivable, so it would be virtually untouched by human hands."

With that objective in mind, PLCI began the task of integrating *Epay Manager* with PepsiCo's finance systems. "Integration and testing were completed within six weeks, and we were ready to go live," says Parkhideh.

The result of integrating *Epay Manager* with PLCI's management and accounting systems is an automated back office that is paperless on both sides of the ledger. *Epay Manager* uses the data it receives from PLCI to guide the entire transaction.

"Our process reverses the traditional method of a carrier sending an invoice by mail or email, which requires a full audit to identify discrepancies," says Whaley. "Instead of allowing carriers to begin the settlement process with potentially incorrect data, *Epay Manager* proactively sends the carrier PLCI's version of the transaction, based on previously agreed-to contractual data stored in the PLCI system."

This approach helps to reduce the number of disputes, Whaley notes, because carrier data is inaccurate up to 30 percent of the time, and often requires adjustments and concessions to resolve disputes. Sorting out and correcting these issues sap the payer's energy, time, and money.

"We start the process with accurate customer data," says Whaley. "Our system integrates with the users' management systems, calling on contract and rate agreement data to create electronic invoices we send directly to carriers for review and acceptance," says Whaley. "When carriers receive our version of the transaction, they have two choices: they can accept the proposed amount, or enter into dispute, which happens less than one percent of the time.

"Not only is our invoice both interactive and dynamic, it also includes a full-service tool for carriers to attach documents, select an early payment option, or add a reference number," he adds. "All that's left is to wait for a direct deposit on the requested day."

Above and Beyond

Today, PLCI's back-office operations are completely electronic. When PLCI adds a carrier to its network, it no longer creates or mails invoices or proof-of-delivery documents. Instead, as loads are delivered, PLCI's management systems send rated transaction data to *Epay Manager*, which creates invoices and automatically emails them to the carriers.

To receive payment, carriers are asked to verify the proposed rate and, in most cases, submit delivery documents via upload, fax, or email. Carriers are able to better manage cash flow by accelerating payments on selected invoices, which are then paid via direct deposit.

"We now have a system that allows us to exchange electronic invoices with our carriers, resolve disputes, collect delivery documents, and make direct deposits to carrier accounts," says Merritt. "The system also allows us to classify, store, and attach documents to invoices it creates and sends to our customers.

"And, we eliminated the time it takes our staff to audit and pay a carrier invoice, and create and send a customer invoice," she notes.

In addition to modernizing how PLCI presents and pays invoices, Level One customized *Epay Manager* to automate PLCI's entire customer invoicing process. It accomplished this by linking payment data and delivery documents to a corresponding receivable record in *Epay Manager*, then applying customer-specific billing rules, built into the system.

Both Merritt and Parkhideh say Level One Technologies was easy to work with and flexible when it came to designing *Epay Manager* to meet their specific needs.

"We asked Level One to make 30 small changes to the system to better meet our needs," says Parkhideh. "Because they found value in our suggestions, the Level One team made the changes at no cost, and completed them within 90 days.

"In some cases, they went beyond what we asked for and made improvements that weren't on our horizon," he adds.

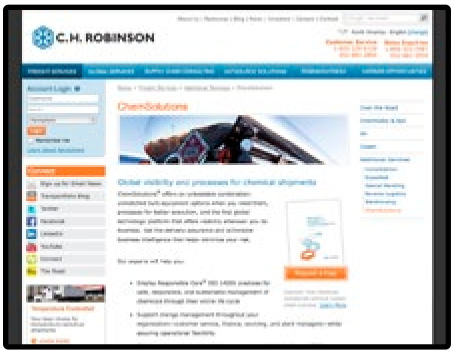
Some of the changes PLCI wanted to make to the system—such as being able to copy reference numbers or shipments directly into *Epay Manager* without having to go through PLCI's management software, or improving the way paperwork is processed—were very small.

"But a few minutes saved here and there adds up to a lot of time in the long run," Merritt says.

Overall, *Epay Manager* has helped improve PLCI's financial processes and efficiency since it started using the system, Merritt says. Following the launch, PLCI almost doubled the volume it was handling, but didn't have to make a single addition to the finance team.

PLCI finds these types of efficiencies very refreshing. ■

3PLs



C.H. Robinson Worldwide, Inc. • www.chrobinson.com

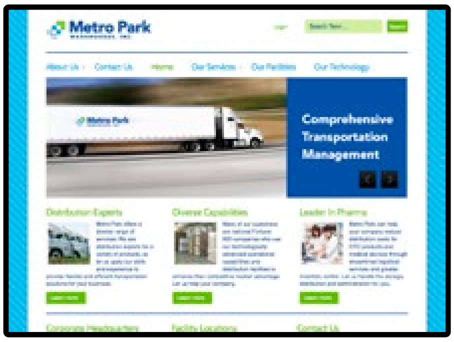
Founded in 1905, C.H. Robinson Worldwide, Inc. is one of the largest third-party logistics companies in the world, providing multimodal transportation, fresh produce sourcing, and information services to more than 32,000 customers globally, ranging from Fortune 500 companies to small businesses in a variety of industries. For more information about our company, visit our Web site at www.chrobinson.com.

C.L. Services, Inc. • www.clservicesinc.com

Dependability, accuracy, knowledgeable staff, and raving customer service are the hallmarks of C.L. Services, Inc. C.L. Services moves shipments both nationally and internationally, and specializes in providing dry and temperature-controlled truckload service throughout the United States and Canada. With year-round rate contracts, and flexible spot-pricing, C.L. Services knows how to get the job done.

DSC Logistics • www.dsclogistics.com

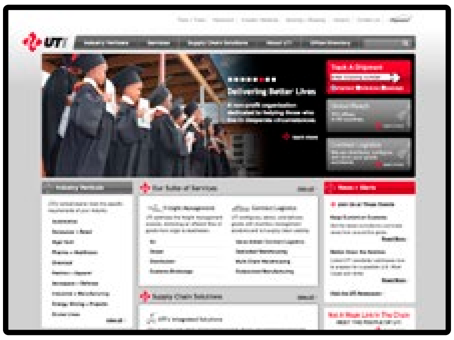
With experience, knowledge, and IT, DSC Logistics helps companies reach their business goals. Services provided by DSC include supply chain analysis and design, strategic solutions-based consulting, systems integration, process improvement, and management of logistics operations such as warehousing, transportation, packaging, and fulfillment. DSC manages change and information in the supply chain by using a strategy called sense-and-respond, and by being ready for anything!



Metro Park Warehouses, Inc. • www.mpwus.com

Metro Park Warehouses is a full-service 3PL offering 2 million square feet in Kansas City of modern food-grade warehousing space, including medical temperature-controlled space, ATF and national pharmaceutical licensed distribution, AIB Superior ratings, and 5 rail facilities, all open to reciprocal switching. Value-added services include end-to-end call center, shipping, and invoicing; retail display building; heat-tunnel packaging and shrink-wrapping; and a dedicated local and regional trucking fleet. Contact Metro Park to gain the competitive edge.

IN THIS SECTION:
3PLs - Chemical Logistics



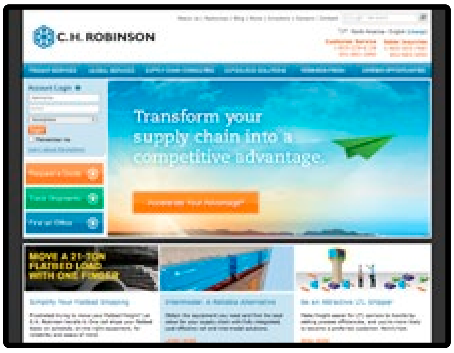
UTi Worldwide • www.go2uti.com

UTi is an industry-leading supply chain management company that delivers competitive advantage to our clients' supply chains. With innovative, integrated solutions configured to your specific requirements within any major vertical market, we design, manage and service supply chains efficiently and cost-effectively. UTi's 313 offices and 245 logistics centers in 59 countries enable us to develop and implement client-centric, global solutions with services that include freight forwarding, contract logistics, customs brokerage, distribution, and managed transportation services.

CHEMICAL LOGISTICS

A&R Logistics • www.artransport.com

A&R Logistics specializes in bulk transportation, packaging, distribution, and logistics. A&R provides dependable, quality services to meet your distribution and logistics needs. Through analytical reviews, A&R customizes timely, cost-effective solutions for your company. Put A&R's experienced staff and extensive affiliate network to work for you, and realize global solutions in a changing worldwide market.



C.H. Robinson Worldwide, Inc. • www.chrobinson.com/en/us/Freight-Services/Additional-Services/ChemSolutions

Chemical shippers are developing new processes and increasing visibility into their global supply chains to gain competitive advantages. ChemSolutions offers a combination of chemical shipping expertise, unmatched bulk equipment options when you need them, processes for better execution, and Navisphere, the first global technology platform that provides visibility wherever you do business.

ChemLogix • www.chemlogix.com

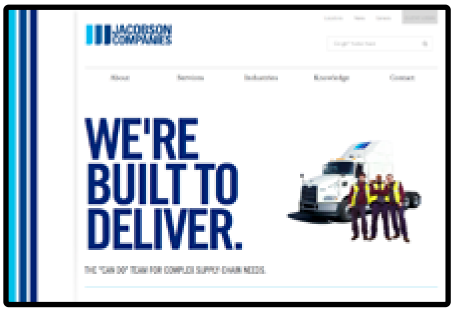
ChemLogix is a leading provider of comprehensive chemical industry logistics management outsourcing and technology services that, together with its supply chain consulting resources, enable shippers to improve performance and drive economic value. ChemLogix solves vital logistics challenges by leveraging chemical industry expertise, best-of-breed technology, and a personalized, high-touch approach to deliver measurable, sustainable value.

Dupré Logistics • www.duprelogistics.com

With specific emphasis in the chemical, consumer products, and beverage industries, Dupré's unique solutions provide expertise in dedicated fleets, transportation management/brokerage, materials handling, and reverse logistics. Dupré works to understand your business and measure how our system meets your expectations.

Jacobson Companies • www.jacobsonco.com

Jacobson Companies is a leading third-party logistics company providing end-to-end supply chain solutions including warehousing and distribution, contract packaging and manufacturing, freight management, customs brokerage, and ocean and airfreight forwarding. Jacobson offers expertise in a range of industry verticals including food and beverage, consumer packaged goods, chemicals, healthcare/life sciences, durable goods, consumer electronics, and retail. What can we do for you!



Labelmaster • www.labelmaster.com

When you ship dangerous goods with Labelmaster, you get the best of three worlds: Best-in-class software, consulting services, and an assortment of products to keep you compliant, safe, and efficient when shipping dangerous goods. Whether you ship a few packages a day, or manage a global supply chain, choose the team of globally recognized experts who deliver the best hazmat shipping solutions in the world. Trust Labelmaster.

LMS Logistics • www.lmslogistics.com

Logistics Management Solutions (LMS) offers TOTAL, a Web-enabled TMS that significantly reduces overall transportation costs, can be implemented—and producing results—within 90 days, offers a low-cost point of entry, and easily integrates into existing ERP systems. Many of our clients, including BASF and Monsanto, are using TOTAL to significantly cut their transportation costs. Contact us: 1-800-355-2153.

Odyssey Logistics & Technology • www.odysseylogistics.com

Odyssey Logistics & Technology combines deeply skilled industry professionals with a leading technology solution to provide multimodal logistics management services to the chemical industry and other process manufacturers. Odyssey Logistics & Technology enables these companies to outsource any part of their raw materials and finished goods management and transportation. They achieve cost savings through reduced transportation and infrastructure costs, measurable customer service and process improvements, and improved data quality and management.

Pacific Coast Warehouse Company • www.pcwc.com

Pacific Coast Warehouse Company (PCWC) is a third-party logistics provider based in California, with more than 70,000 food grade rack and bulk pallet storage positions in the southern and northern California markets. PCWC offers a complete line of warehousing and value-added services, as well as all levels of transportation service, including drayage, intermodal, full truckload, flatbed, and LTL. For more information about Pacific Coast Warehouse Co., visit www.pcwc.com.

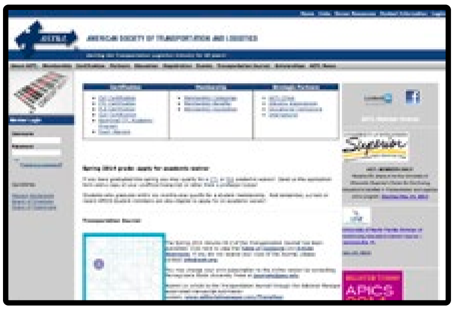
Weber Logistics • www.weberlogistics.com

As a full-service, complete logistics provider, we are experts at non-asset freight management; asset-based LTL and TL services, including temperature-controlled; dedicated and shared warehousing; distribution; cross-docking/pool distribution; transloading; network optimization modeling and analysis; retail compliance; order fulfillment; materials handling; supply chain management; real estate development; and personnel staffing. We have been in business for 85 years and specialize in working with importers; retailers; food, beverage, and CPG companies; and chemical and paper manufacturers.

WSI (Warehouse Specialists, Inc.) • www.wsinc.com

From canned goods to chemicals, heavy equipment to electronics, WSI's expertise spans a wide range of consumer and industrial products. We help customers in a wide range of industries increase efficiency and reduce costs through reliable, integrated logistics and supply chain optimization. Our Condition, Count & Time™ promise ensures accurate, timely performance. A solutions-oriented approach results in the optimal supply chain strategy for each customer's unique needs. Our commitment to Lean principles creates an organization-wide focus on efficiency and continuous improvement.

EDUCATION



American Society of Transportation and Logistics • www.astl.org

The American Society of Transportation and Logistics (ASTL) provides a career pathway of life-long learning for professionals in the transportation logistics industry. Earn your industry credential as a GLA, PLS, CTL, or DLP, and an opportunity to connect with colleagues around the world. ASTL provides state-of-the-art knowledge for developing practical answers to today's transportation and logistics challenges.

Duquesne University, Palumbo-Donahue School of Business www.duq.edu/scm

At Duquesne University's Palumbo-Donahue School of Business, undergraduates can earn a supply chain management major that includes an optional healthcare supply chain track, while MBA students can pursue a concentration in supply chain management. These programs transform students—they graduate with a deep understanding of global challenges, the role of information systems, and the importance of leading with integrity when managing supply chains. Duquesne University believes great employees are a supply chain's strongest link.

Institute of Logistical Management (ILM) • www.ilm.edu

ILM offers quality, cost-effective, self-paced professional certifications in transportation, logistics, and supply chain for students to achieve competency in the logistics industry. ILM integrates transportation, logistics, and supply chain to certify professionals for real-world application. Now offering eight certifications. For further information, contact us at 888-456-4600 or info@logisticseducation.edu.

University of San Diego • www.sandiego.edu/msscm

The University of San Diego's ISM-approved Master of Science in Supply Chain Management is delivered via e-learning with only a few on-campus sessions per year. Through relevant curriculum with applied learning, you'll develop leadership competencies that will enable you to initiate change and drive improvements across increasingly complex supply chain networks. Join us now for two years that will change your life!

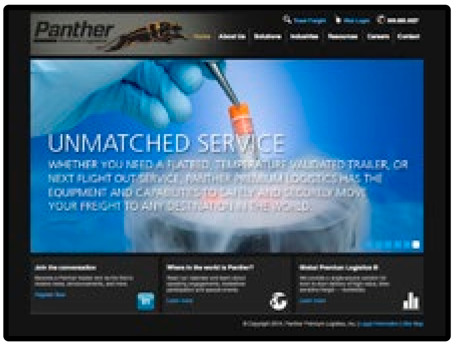
Washington University, Olin Business School • www.olin.wustl.edu

Located in the heart of the Midwest, Olin is one of the country's leading research-oriented business schools. Its degree programs are known for their demanding scholastic standards and emphasis on experiential learning. "Research-driven thinking, applied" is the organizing principle across the school's degree and nondegree programs, which emphasize developing analytical, critical-thinking skills; global competence; and communication and collaboration skills needed to solve today's complex business challenges. The school's small size fosters key relationships that provide endless opportunities for continuous achievement.

GLOBAL LOGISTICS

Panther Expedited Services • www.pantherexpedite.com

Panther is the leader in providing premium logistics solutions to Fortune 1000 corporations, government agencies, defense contractors, and transportation service providers. We offer door-to-door ground, air, and ocean solutions to and from anywhere in the world. With one call to us at 800-685-0657, you will open the door to lower costs and a broader set of solutions.



Ryder Supply Chain Solutions • 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.

HAZMAT

Labelmaster • www.labelmaster.com

When you ship dangerous goods with Labelmaster, you get the best of three worlds: Best-in-class software, consulting services, and an assortment of products to keep you compliant, safe and efficient when shipping dangerous goods. Whether you ship a few packages a day or manage a global supply chain, choose the team of globally recognized experts who deliver the best hazmat shipping solutions in the world. Trust Labelmaster.

LOGISTICS IT

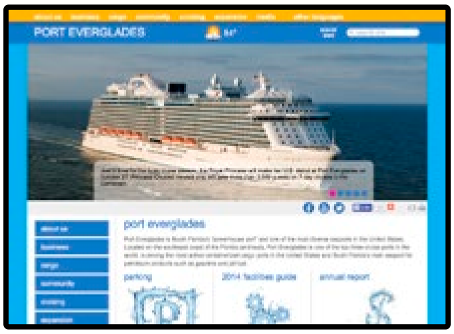
Arkieva • www.arkieva.com

Arkieva supply chain software enables companies to gather, process, and share information across the supply chain. Arkieva solutions combine real-world experience in sales and operations planning (S&OP), collaborative planning, demand and inventory management, production planning, scheduling, and distribution. Users can cut and slice demand and inventory data, measure forecast accuracy, track S&OP performance, and monitor critical metrics.

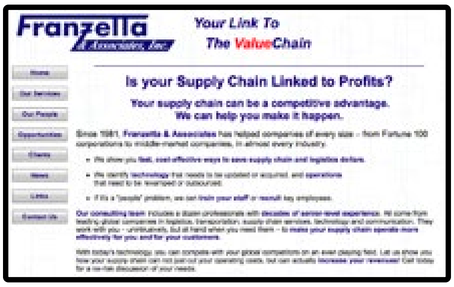
PORTS

Port Everglades • www.porteverglades.net

Nobody moves cargo in and out faster than Port Everglades. The port is part of a thriving global transportation network that counts among its attributes a favorable location less than one mile from the Atlantic Shipping Lane, direct access to multimodal inland links through Florida's interstate and highway systems, and an FEC rail hub within two miles. Across the street is Fort Lauderdale Airport, one of the fastest-growing airports in the nation. Visit the Web site for more details.



RECRUITING



Franzetta & Associates Inc. • www.franzetta.com

Franzetta & Associates Inc. assembled some of the most respected supply chain experts in the world. We are not just consultants; we are proven successful industry leaders who created yesterday's standards and are driving today's innovations. We can show you how to take control of your supply chain to reduce costs, improve customer satisfaction, and increase revenues. Our fees are lower than any of our competitors, yet we are far more reliable, non-intrusive, and efficient.

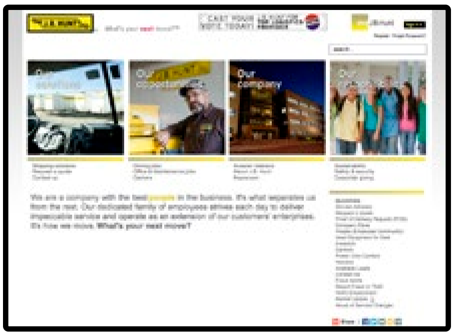
RETAIL LOGISTICS

Performance Team • www.ptgt.net

Performance Team is the only thing that should come between your products and your customers. For nearly 25 years, Performance Team has been offering its expertise to the retail and manufacturing industries with a broad range of supply chain services including: trucking, distribution, logistics, and fulfillment. See why Performance Team continuously earns a reputation as the premiere trucking, consolidation, and distribution company in the United States; log on to www.ptgt.net.

IN THIS SECTION:
Sustainability – Warehousing

SUSTAINABILITY



J.B. Hunt Transport Services, Inc. • www.jbhunt.com

J.B. Hunt Transport Services, Inc., a Fortune 500 company and one of the largest transportation logistics providers in North America, supplies safe and reliable transportation services to a diverse group of customers throughout the continental United States, Canada, and Mexico. Using an integrated, multimodal approach, J.B. Hunt offers comprehensive solutions centered on delivering customer value and industry-leading service.

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 Web site so that you might get to know its services. Then, contact Kenco so that you might truly understand its unique strategic advantages.

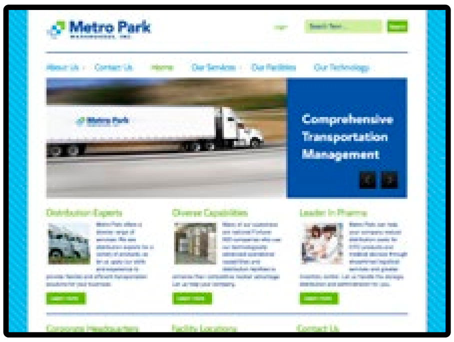
TMS

Suntek Systems Inc. • www.ilogisys.com

Suntek provides its logistics management software, *iLogisys*, for freight forwarders, NVOCCs, 3PLs, and customs brokers. As the company's flagship solution, *iLogisys* offers simple and efficient methods of logistics operation, collaboration tools between related parties, extensive supply chain visibility, B2B EDI connectivity, and more control over business management. The cost-effective and feature-rich *iLogisys* products boost your customer satisfaction, and increase sales opportunities for business growth.

WAREHOUSING

Metro Park Warehouses, Inc. • www.mpwus.com



Metro Park Warehouses, Inc. is a full-service 3PL offering 2 million square feet in Kansas City of modern food-grade warehousing space, including medical temperature-controlled space, ATF and national pharmaceutical licensed distribution, AIB Superior ratings, and 5 rail facilities, all open to reciprocal switching. Value-added services include end-to-end call center, shipping, and invoicing; retail display building; heat-tunnel packaging and shrink-wrapping; and a dedicated local and regional trucking fleet. Contact Metro Park to gain the competitive edge.

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.

3PL Central

TITLE: ***Outshine Your Competition: The Five Compelling Advantages Of a Warehouse Management Platform***

DOWNLOAD: *bit.ly/1nv9L7L*

SUMMARY: Looking for ways to win more customers? Then download 3PL Central's latest free whitepaper, *Outshine Your Competition: The Five Compelling Advantages of a Warehouse Management Platform*, today!

Access Group

TITLE: ***Supply Chain IT: The Factory Cost Cruncher***

DOWNLOAD: *bit.ly/1nVO8JU*

SUMMARY: The cost of running factories is one of the biggest challenges facing businesses today. Manufacturing and supply chain IT systems are not just a business cost – they are a vital tool in controlling and reducing other factory costs. But, in a fast-moving environment, cost control can only be sustained by continual review, renewal, and reinvestment. After reading this whitepaper, you'll understand how you can improve supply chain visibility and traceability; minimize stock and waste; and remove production bottlenecks.

Verdantis

TITLE: ***MDM as an Answer to ROI of ERP Deployment***

DOWNLOAD: *bit.ly/1nVOcZW*

SUMMARY: A recent survey finds that 75 to 80 percent of ERP projects fail to generate the desired return on investment (ROI). These initiatives need to be well supported by success factors such as Master Data Management (MDM). This whitepaper addresses the challenges MDM initiatives can resolve during ERP projects; where MDM fits in the ERP blueprint; MDM's impact on the ERP implementation lifecycle; and how MDM accelerates ROI for ERP implementation.

enVista Corporation

TITLE: ***Don't Just Report on Vendor Non-Compliance, Minimize It***
DOWNLOAD: *bit.ly/1nVO1hq*
SUMMARY: Improved vendor management offers several important implications to your business, including: improved customer service, minimized lost sales, and significantly increased profits. In this whitepaper from enVista, you'll learn how to develop strategic vendor management programs to achieve significant cost savings, and ways to effectively mitigate vendor non-compliance activity before it happens.

Weber Logistics

TITLE: ***Pool Distribution: Shippers of Temperature-Controlled Freight Collaborate to Save***
DOWNLOAD: *bit.ly/1u428FT*
SUMMARY: Shippers of temperature-controlled freight, particularly those that ship smaller orders, continue to rely on national less-than-truckload (LTL) carriers for deliveries across the United States. Instead, they should consider a pool distribution strategy that consolidates freight with like shippers, and delivers it in truckload volumes directly to key markets – no stops – for final-mile service. This paper covers the benefits and keys to success in implementing such a strategy.

Softeon

TITLE: ***Is Now the Time for Cloud WMS?***
DOWNLOAD: *bit.ly/1mmSfQc*
SUMMARY: Warehouse Management Systems (WMS) have been late to the cloud game, and suitable only for simple DC operations. The times have changed. Cloud-based supply chain solutions are rapidly gaining share, and will likely prove the dominant approach in just a few years. Learn how the barriers to warehouse management in the cloud are dropping, and why companies are taking advantage of its power right now.

Accellos

TITLE: ***Optimizing EDI for Microsoft Dynamics AX***
DOWNLOAD: *bit.ly/1kLTrMy*
SUMMARY: Today, most EDI providers deploy one application across multiple ERP platforms, rather than developing an EDI solution exclusively for a specific ERP product that seamlessly integrates time-sensitive business documents with your ERP. The result is a solution that falls short in providing the necessary depth, flexibility, and ease of use that your organization requires when exchanging EDI documents across your business partner community. Download this whitepaper and discover the benefits of an EDI solution built exclusively for Microsoft Dynamics AX.

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**

//Services//

Breakbulk and project cargo specialist **Intermarine** will charter 15 new mid-size, eco-friendly ships as part of a fleet renewal program. Intermarine expects the new ships to start entering service in 2015.

UTi Worldwide moved to a new global hub and freight forwarding facility in Houston to better serve the region's energy sector. The new location is three times the size of its predecessor, and features teams trained to handle hazardous materials, as well as a laydown yard for staging oversized equipment.

UPS opened a new 177,000-square-foot contract logistics distribution center in Beijing. The facility, located near Beijing Capital International Airport, provides order fulfillment, inventory management, kitting, and packaging services.

Amerijet International opened an air cargo hub in Reno, Nev. The company leased 10,000 square feet of space at Reno-Tahoe International Airport, and uses Boeing 767 aircraft to move cargo between its Reno and Columbus, Ohio, hubs daily.

Global freight forwarder **Geodis Wilson** formed a partnership in Bahrain with regional warehousing and distribution specialist **Banz Group**. The joint venture offers freight forwarding and

DHL Express began helicopter cargo service in Los Angeles to guarantee deliveries in the midst of rush-hour traffic. International shipments arrive at the DHL LAX Gateway, and are transported to a dedicated heliport in downtown Los Angeles, where a DHL courier takes the cargo for final-mile delivery.

contract logistics services, including inbound and outbound logistics, customs clearance, cargo insurance, and reverse logistics, from an 86,000-square-foot warehouse in Juffair.

Pilot Freight Services moved its Harlingen, Texas, location to a new 30,000-square-foot facility in McAllen. The new building is three times larger than the previous facility, and is near the Pharr Bridge, the region's main commercial transportation route between Mexico and the United States.

Third-party logistics provider **North America 3PL** received approval from U.S. Customs and Border Protection (CBP) to open a centralized examination station next to the Port of Oakland. The facility has on-site CBP inspectors to expedite cargo inspections and clearance, and is located adjacent to Class I railroads.

SDV expanded its global network with a 13,000-square-foot temperature-controlled warehouse in Budapest, Hungary. The facility, operated in partnership with regional logistics provider **Airmax**, serves the pharmaceuticals industry.

Evansville Western Railway and **CSX** started operations at a 318-acre intermodal terminal in Winter Haven, Fla. Containerized freight previously handled at CSX's intermodal facility in Orlando is now handled at Winter Haven.

Carrier Transicold's anti-tamper refrigerant seal system helps shippers preserve the integrity of temperature-controlled cargo by preventing unauthorized refrigerants from being used in container units. The one-use seals are available as an option on Carrier Transicold's PrimeLINE, ThinLINE, and EliteLINE container refrigeration units.

// Transportation //

King Solutions, an asset-based 3PL, started offering less-than-truckload freight service from Minneapolis to the East and West Coasts. The CoastalPlus service takes two to three business days, and accommodates shipments up to 12 feet long weighing 10,000 pounds or less.

3PL **Railex** began offering expedited service from California and Washington into Florida. Additionally, the service provides container consolidation for shippers with eastbound shipments originating from separate West Coast locations.

MOL (America) started a direct service between the U.S. East Coast and the west coast of South America without a need for transshipment. The port rotation includes New York; Charleston; Miami; Cartagena, Colombia; Manzanillo, Mexico; Balboa, Panama; Buenaventura, Colombia; Callao, Peru; and Valparaiso, Chile.

Ward Transport & Logistics and **Dependable Highway Express** partnered to offer coast-to-coast less-than-truckload service between California, Nevada, Arizona, and the Middle Atlantic region. The new service launched in August 2014.

Ocean consolidator **Famous Pacific Shipping Group** introduced a temperature-controlled less-than-containerload ocean service for perishable commodities shippers. The service operates every two weeks from the company's Rotterdam container freight station to Dubai and Japan.

South Korean air cargo carrier **Air Incheon** began providing six weekly scheduled flights to Japan; three weekly flights to Sakhalin Island, Russia; and three weekly flights to Yantai, China.

The new flights are part of an effort to establish a regional hub at South Korea's Incheon International Airport.

Third-party logistics provider **McKay Express** began operating its Transcold Express refrigerated boxcar rail route in both directions between Wilmington, Ill., and Selma, Calif. Each car holds four truckloads, or more than 200 truckloads per train. The service takes four days to reach the Midwest from California.

BNSF Railway joined Mexican railroad **Ferromex** to provide a new intermodal service between Chicago and Silao, Guanajuato, Mexico. The service gives Mexico's manufacturing sector in the Bajio region access to cross-border rail transport into the United States.

SSI Schaefer's Logimat Vertical Lift Module features flexible tray and compartment options with weight capacities from 550 to 1,650 pounds. A smart placement algorithm finds optimal tray positions, while a laser pointer system identifies pieces to be picked within the tray, helping to streamline the picking process. The opening adjusts to the worker's height to ensure ergonomically correct operation.

//Technology//

Marathon Data Systems added features to its cloud-based route planning solution to track load capacity limits, allowing fleet managers to optimize routes so that vehicles do not accidentally violate weight, volume, or value restrictions while delivering and picking up cargo along their routes.

Supply chain execution software provider **Kewill** added enhancements to the *Kewill MOVE* multimodal transportation platform. New supply chain visibility capabilities create a real-time flow of shipment data, improve control over core processes, and improve lead times and performance.

McLeod Software released the *PowerBroker LTL* module for version 12.1 of its *PowerBroker* software suite. The module provides users with LTL ratings and quotes through an Internet portal.

Global trade software provider **Integration Point** added the *Country of Origin Determination* module to its global trade management software. The software automatically

CHEP's 40x24 half pallet is rated for single unit loads up to 1,200 pounds, and can be stacked empty up to 19 high in a trailer. The pallet's block design allows for pinwheeling to help optimize space and increase efficiency.

decides which regulations must be followed—based on the appropriate marking rules of origin for each country—when preparing goods for import and export.

The *Locate* app by mobile technology provider **CrossFleet** gives shippers and carriers real-time updates on shipments based on GPS data from a truck driver's smartphone. The data provided about pickups, deliveries, and shipment locations allows shippers to maintain greater visibility and provide more accurate customer service.

//Products//

ORBIS Corporation expanded its Stack 'R pallet line with additional options, including a non-rackable pallet that can stack up to 30,000 static pounds, as well as an FDA-approved polypropylene pallet and a fully edge-rackable pallet that can each support up to 3,000 pounds.

Rite Hite's new Eclipse dock-sealing system adapts to all trailers to provide a tight seal at the loading dock, minimizing external contaminants and energy loss from outside exposure.

CALENDAR

YOUR LOGISTICS DATEBOOK

SEPT. 21

Intermodal Association of North America

Intermodal EXPO 2014

www.intermodalEXPO.com | Long Beach, Calif. | SEP 21-23, 2014

AUDIENCE: Supply chain, logistics, and transportation professionals
FOCUS: Intermodal economic environment, sales, and new business opportunities; intermodal operations; small business support; exhibition

NOV 3–5, 2014 Philadelphia, Pa.
Worldwide Business Research

LogiChem 2014

www.wbresearch.com/scmchem

AUDIENCE: Chemical supply chain stakeholders
FOCUS: Using intermodal logistics to improve operations, assessing supply chain risk, driving collaboration between supply chain and finance, optimizing global supply chain networks

CONFERENCES

JUL 16, 2014 New York, N.Y.
Institute for Supply Management

ISM Risk Management Summit

www.ism.ws

AUDIENCE: Supply chain and procurement professionals
FOCUS: Identifying and overseeing critical risks, gaining visibility into the supply chain, effective communication, strategy implementation

SEP 21–24, 2014 Nashville, Tenn.
TMW Systems

TransForum 2014

www.tmwsystems.com/transforum

AUDIENCE: TMW fleet and transportation management software users
FOCUS: Software, systems, and business education; exhibition of TMW Systems technology and service partners

SEP 21–24, 2014 San Antonio, Texas
Council of Supply Chain Management Professionals

CSCMP Annual Global Conference

www.cscmp.org

AUDIENCE: Supply chain, logistics, and transportation professionals
FOCUS: Supply chain talent and career development, supply chain research and innovation, manufacturing performance from a supply chain perspective, energizing and strengthening the supply chain

SEP 29–OCT 1, 2014 Dallas, Texas
The Customized Logistics and Delivery Association

PARCEL Forum '14

www.parcelforum.com

AUDIENCE: Parcel industry stakeholders
FOCUS: Parcel industry case studies and educational tracks; regional carrier, warehousing, and materials handling exhibition

OCT 5–7, 2014 Las Vegas, Nev.
Supply Chain Operations Private Exposition

SCOPE Fall

www.scopefall.com

AUDIENCE: Supply chain, logistics, operations, procurement, materials handling, and transportation professionals
FOCUS: The role of leadership in supply chain excellence, optimizing distribution networks while reducing costs, finding the right 3PL, engineering the supply chain for growth

OCT 19–21, 2014 New Orleans, La.
The Association for Operations Management

APICS 2014

www.apics.org

AUDIENCE: Supply chain, logistics, and operations management professionals
FOCUS: Operational efficiency, risk and resiliency, business analytics, supply chain innovation, supply chain exhibition

NOV 9–13, 2014 Houston, Texas
American Association of Port Authorities

2014 AAPA Annual Convention

www.aapa-ports.org

AUDIENCE: Port officials, marine transportation industry stakeholders
FOCUS: The global economy's impact on seaports and trade, optimizing existing resources, funding port infrastructure, role of ports in the supply chain

NOV 14–19, 2014 Ft. Lauderdale, Fla.
National Industrial Transportation League

NITL Conference & TransComp Exhibition

www.nitl.org

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

SEMINARS & WORKSHOPS

SEP 29–30, 2014 Savannah, Ga.
Georgia Tech Supply Chain & Logistics Institute

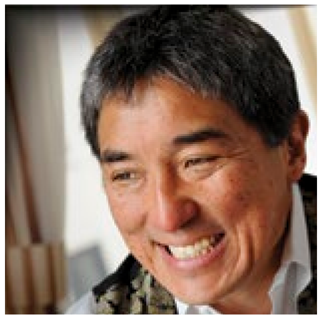
Lean Inbound Logistics

bit.ly/GATechLeanInbound

AUDIENCE: Supply chain and logistics professionals
FOCUS: Lean strategy development, strategic supplier management, mapping an inbound logistics network, calculating logistics costs, improving material flow balances and costs, tour of Target distribution center

CORNERSTONES & CONNECTIONS

CSCMP's
ANNUAL GLOBAL
CONFERENCE 2014
SEPTEMBER 21–24 SAN ANTONIO



INNOVATE YOUR COMPANY TO GREATNESS
Our Keynote Speaker Shares the Secret

Guy Kawasaki
Special Advisor to the Motorola Business Unit of Google
Former Chief Evangelist of Apple
The Art of Innovation

LEARN HOW TO SWIM WITH THE SHARKS
Tuesday Major Session Speaker Teaches You How

Daymond John
Star of ABC television's hit reality business show, *Shark Tank*
Take the Plunge: You Can Swim with the Sharks

CSCMP's Annual Global Conference
September 21-24, 2014 • San Antonio, Texas, USA
Henry B. Gonzalez Convention Center

Regardless of your supply chain role, you're an entrepreneur. You seek out and capitalize on opportunities for the benefit of your company, your customers, and yourself. But in today's business environment, words like "virtual," "fragmented," and "empowered" can also mean "alone." That's precisely why you belong at CSCMP's Annual Global Conference. Connect with the brightest minds and discover the latest thinking at the supply chain industry's premier event.

Introducing a Whole New Way to Learn
In our continual quest to enhance and maximize your conference experience, we've organized our sessions into six disciplinary specialties we call "Cornerstones." These six cornerstones represent the foundation upon which supply chain management and logistics were built. They are designed to quickly direct you to the conference tracks and sessions most pertinent to your area of operation, and are uniquely tailored to the professional development of both you and your team.

Cornerstone I: Talent and Career
Cornerstone II: Economic Forecasts, Benchmarks, and Surveys
Cornerstone III: Thought Leadership and Innovation
Cornerstone IV: Manufacturing, Planning, and Sourcing
Cornerstone V: Transportation, Distribution, and Warehousing
Cornerstone VI: The Customer

Register today at cscmpconference.org.

CSCMP™ Council of Supply Chain Management Professionals
Educating and Connecting the World's Supply Chain Professionals.™

RESOURCE CENTER

06.14

INBOUND LOGISTICS WORKS FOR YOU!

For a specific response, contact these advertisers directly. Please tell them you saw their ad in *Inbound Logistics*.

For faster service, go online: inboundlogistics.com/rfp

3PLs

A&R Logistics pg. 85
www.artransport.com 800-542-8058

ArcBest Corporation pg. 31
arcb.com 479-785-6000

C.H. Robinson pgs. 11, 95
accelerateyouradvantage.com 855-229-6128

CaseStack pg. 27
www.casestack.com 855-638-3500

ChemLogix pg. 93
www.chemlogix.com 215-461-3800

DSC Logistics pg. 46
www.dsclogistics.com 847-635-4952

Dupré Logistics pg. 79
www.duprelogistics.com 855-686-5478

J.B. Hunt Transport Services Cover 2
www.jbhunt.com/truckload 855-313-4473

Jacobson Companies pg. 87
www.jacobsonco.com/cando 800-636-6171

Kenco Logistic Services pg. 21
www.kencogroup.com 855-877-5910

Landstar pg. 35
www.landstar.com 877-696-4507

LMS pg. 91
www.lmslogistics.com 800-355-2153

Lynden pg. 18
www.lynden.com 888-596-3361

NFI pg. 33
www.nfiindustries.com 866-634-5627

Odyssey Logistics & Technology pg. 81
www.odysseylogistics.com 866-487-7481

Pacific Coast Warehouse Company pg. 97
www.pcwc.com 909-545-8100

Performance Team pg. 14
www.performanceteam.net 866-775-5120

Port Jersey Logistics pg. 28
www.portjersey.com 609-860-1010

UTi Worldwide pgs. 22–23
www.go2uti.com 562-552-9400

Weber Logistics pg. 83
www.weberlogistics.com 855-GO-WEBER

Werner Enterprises pg. 29
www.werner.com 800-228-2240

WSI (Warehouse Specialists, Inc.) pg. 89
www.wsinc.com/chemicals.html 920-831-3700

Air/Ground Expedited

UPS pg. 7
ups.com/hightechsurvey 800-PICK-UPS

Career Development/Education

American Society of Transportation and Logistics pg. 106
www.astl.org 202-580-7270

Columbus State Community College pg. 109
cscc.edu/logistics 800-621-6407

Duquesne University pg. 101
www.duq.edu/scm 412-396-6276

Georgia Tech Supply Chain & Logistics Institute pg. 107
pe.gatech.edu/supplychain-14 404-385-3501

Institute of Logistical Management pg. 106
www.ilm.edu 888-456-4600

JobsinLogistics.com pg. 107
www.jobsinlogistics.com 877-JOB-POST

Lehigh University pg. 107
www.lehigh.edu 610-758-3000

Ohio State University – Fisher College of Business pg. 108
fisher.osu.edu/scm 614-292-9300

Shippensburg University pg. 109
www.ship.edu/PCDE/SCLM 717-477-7447

Transportation Intermediaries Association (TIA) pg. 108
www.tianet.org/ctb 703-299-5700

University of Kansas pg. 107
kuce.ku.edu/warehouse 785-864-5823

University of San Diego pg. 103
www.sandiego.edu/msscm 619-260-7901

University of Wisconsin-Superior pg. 109
uwsuper.edu/acaddept/dbe/trans 715-394-8230

Washington University in St. Louis, Olin School of Business pg. 105
www.olin.wustl.edu 888-622-5115

Whitman School of Management, Syracuse University pg. 108
supplychain.syr.edu 315-443-4327

Events

CSCMP Annual Global Conference pg. 129
cscmpconference.org 630-574-0985

Expedited Ground

Panther Expedited Services pg. 24
www.pantherpremium.com 800-685-0657

Financial Services

Regions Bank pg. 39
www.regions.com/transportation 704-941-6644

Freight Payment Services

U.S. Bank Corporate Payment Solutions pg. 30
usbpayment.com/freight-payment 866-274-5898

Intermodal

Alliance Shippers, Inc. pg. 13
www.alliance.com 800-222-0451

Inventory Liquidation

Silver Creek Trading pg. 113
www.silvercreektrading.com 360-778-4162

Logistics IT

iLogisys/Suntek Systems pg. 3
www.ilogisys.com 949-789-0070

Labelmaster pg. 37
dangerousgoodssolutions.com 800-578-4955

Magaya Logistics Software Solutions Cover4
www.magaya.com 786-845-9150

Mobile Communications

Twisted Pair pg. 43
www.twistpair.com 206-805-3297

Wave Connections pg. 76
waveconnections.com 206-442-2101

For a specific response, contact these advertisers directly. Please tell them you saw their ad in *Inbound Logistics*.

For faster service, go online: inboundlogistics.com/rfp

RESOURCE CENTER

INBOUND LOGISTICS WORKS FOR YOU!

06.14

Ports

Port Everglades/ Florida East Coast Railway pg. 73
www.fecrwy.com 305-889-5586

Rail

Railex pg. 9
www.railex.com/inbound 888-472-4539

Trucking

Old Dominion Freight Line pg. 17
www.odpromises.com/people 877-334-2964

Saia pg. 5
www.saia.com 800-765-7242

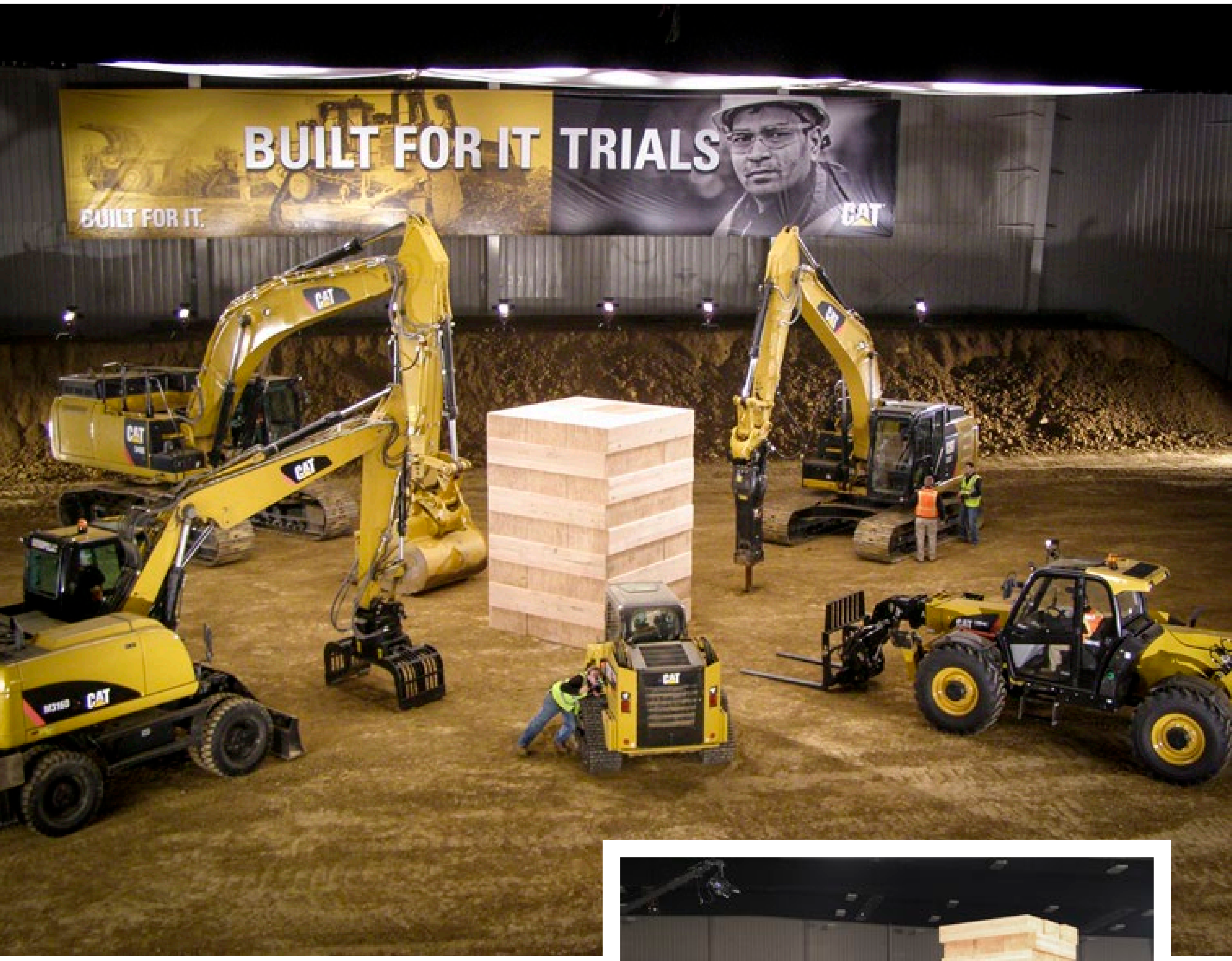
For a specific response, contact these advertisers directly. Please tell them you saw their ad in *Inbound Logistics*.

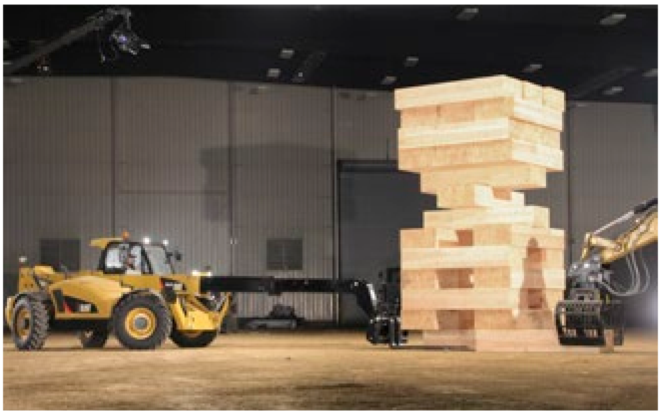
For faster service, go online: inboundlogistics.com/rfp

INDEX

Inbound Logistics (ISSN 0888-8493, USPS 703990) is mailed monthly to approximately 60,000 business professionals who buy, specify, or recommend logistics technology, transportation, and related services, by Thomas Publishing Company LLC, 5 Penn Plaza, NY, NY 10001. José E. Andrade, chairman; Carl T. Holst-Knudsen, president. Periodicals postage paid at New York, NY, and additional mailing offices.

POSTMASTER SEND ADDRESS CHANGES TO: Inbound Logistics, 5 Penn Plaza, New York, NY 10001

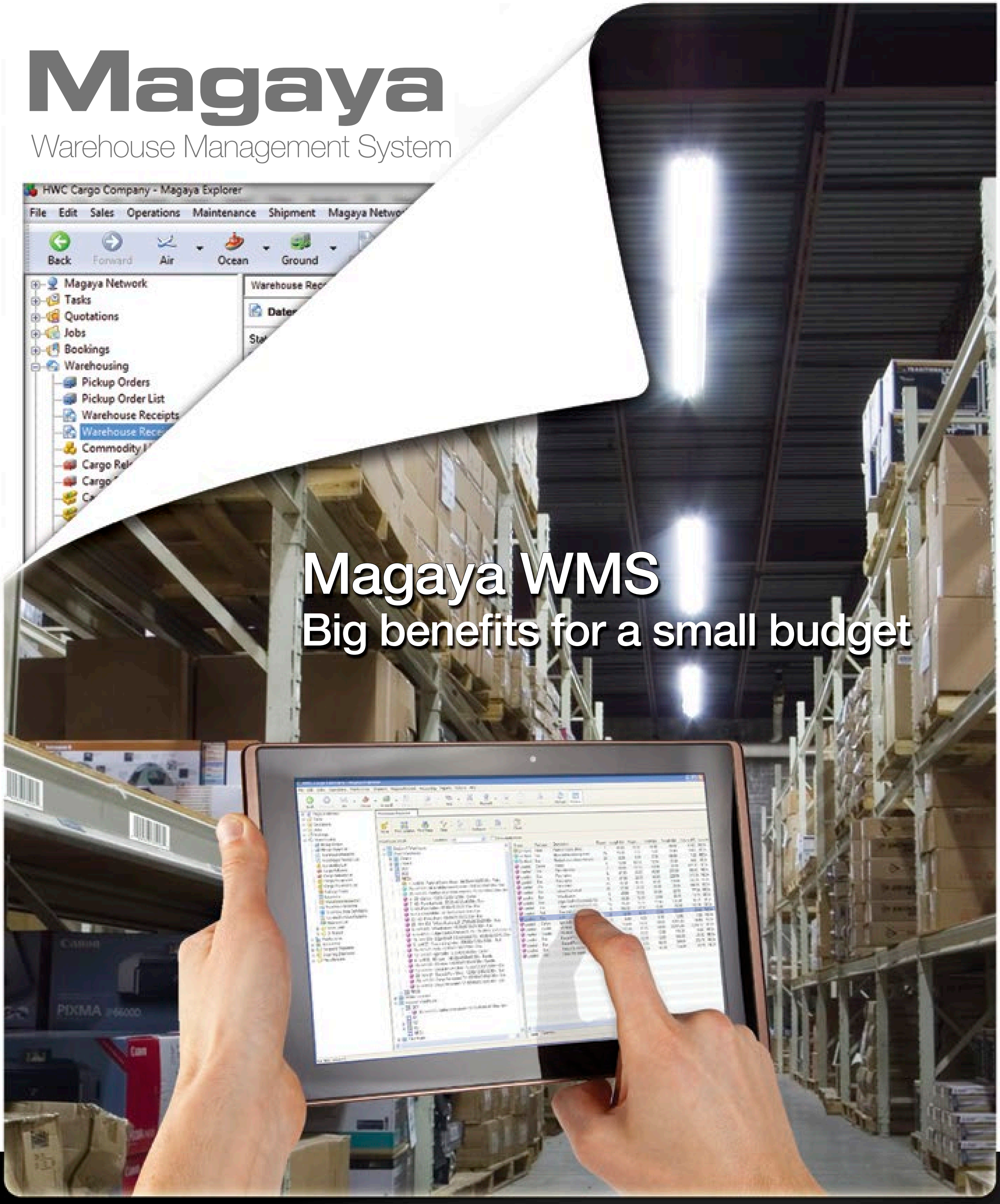




Photos courtesy of Caterpillar Inc.

Big Game

When Caterpillar plays blocks, it plays big. The heavy equipment manufacturer recently pitted five Cat machines—including a pallet fork-equipped telehandler—against an eight-ton stack of 27 wooden Jenga blocks. As part of Cat's *Built for It* equipment demonstration series, machine operators took turns removing and repositioning the 600-pound blocks until the stack ultimately toppled over—just like at home. Except probably louder.


Magaya
Warehouse Management System
HWC Cargo Company - Magaya Explorer
File Edit Sales Operations Maintenance Shipment
Back Forward Air Ocean Ground
Magaya Network
Tasks
Quotations
Jobs
Bookings
Warehousing
Pickup Orders
Pickup Order List
Warehouse Receipts
Magaya WMS
Big benefits for a small budget