SPECIAL
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SUPPLY CHAIN GAIN

Benchmarking Success

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CHECKINGIN

by Keith Biondo | **Publisher**

Gaining Ground

The fortunes of many companies were balanced on the backs of their supply chain, logistics, and transportation managers during the past year. In concert with their carriers, and technology and logistics partners, business logistics professionals across the country produced real supply chain gain by aligning demand to supply. That's why we chose "Supply Chain Gain" as the theme of this year's Logistics Planner issue.

Supply chain gain is not just about squeezing costs or boosting efficiencies. Consider Del Monte Foods, which recently accelerated its demand-driven logistics program using real-time store-level demand signals to cut inventory rates by 27 percent in two years (in one demand-driven pilot program, DC days of supply were slashed by an astounding 44 percent). The company also reduced safety stock; both results freed up substantial working capital. Inconsistent fill rates became more reliable, and today stand at 99 percent, with better than 98 percent in-store stock at key customer locations. Major retail customers also liked the fact that their DC pallet space requirements were reduced by 65 percent in some cases. But perhaps the most important supply chain gain was increased *sales*.

Coca-Cola Bottling Company achieved significant gains this year, too. Determining that supply chain decisions were disconnected and removed from the store shelf, the company's logistics team accelerated demand-driven efforts. Coca-Cola Bottling delivers more than 160 million cases each year, so the stakes are high and the tasks complex. Like Del Monte, it gained efficiencies, and sales-to-inventory turns increased by 75 percent. Connecting the supply chain more closely to the shelf enabled Coca-Cola Bottling to craft a logistics platform from which to launch almost 150 new products.

National Starch achieved supply chain gain by tightening its focus on managing inventory. In little more than one year, the inventory management team reduced working capital needed to sustain sales by cutting total inventory by four percent. The company also cut expedited transport costs and increased inventory turns. And, like Coca-Cola and Del Monte, the supply chain gains drove increases outside logistics–in plant utilization, improving customer service, and supporting marketing efforts.

These supply chain gain sagas, and the others you will read about in this issue, are inspiring reminders of the important work you do every day, in good times and in bad. We want to hear your story, too, because we know that, large or small, every incremental gain interacts with others to move the enterprise in the right direction.

So drop me a line at publisher@inboundlogistics.com and share details on the gains you've made that have helped offset the impact of our current economic environment. ■

inbound logistics

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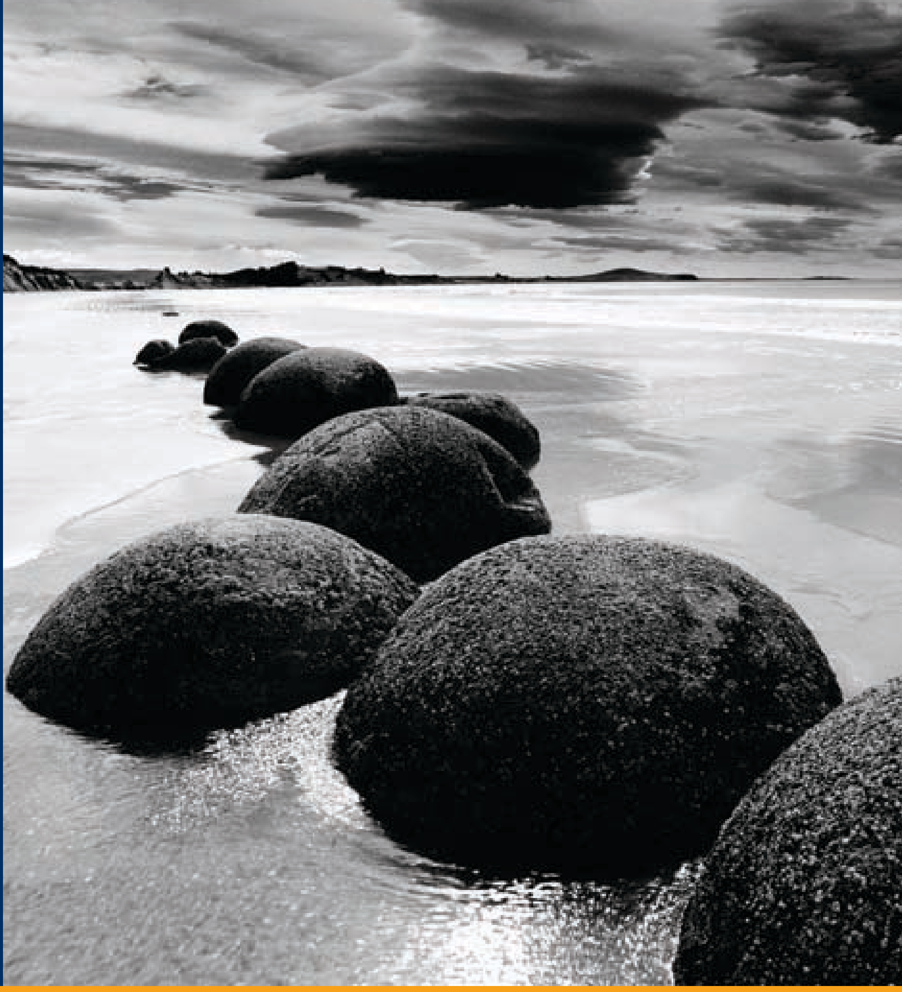
A new horizon

for **Global Trade Management**



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CHECKINGIN

Felecia Stratton

by Felecia Stratton | **Editor**

Gaining Even More Ground

Building the January Logistics Planner is always a process of incremental addition. That's the only way you can even approach, let alone execute, a 528-page issue during the busy holiday season.

Along the way, there are measured benchmarks: meetings, deadlines, rough drafts, edits, designed proofs, polished articles, then a print date. The final product, which you are now holding and reading (or just downloaded), is the sum total of all these individual gains.

As a logistics trade publication, we practice what we preach. This year's editorial theme follows a similar progression, focusing on how businesses are working toward small achievements and achieving big gains within their respective supply chains.

As always, the foundation of this issue is the Logistics Planner Profiles, an in-depth directory of leading transportation and logistics companies (*page 349*). These leaders know a thing or two about helping companies achieve gain by doing more with less. As you press forward in 2011, look to these companies as "gain" changers.

Our cover story, *Supply Chain Gain: Benchmarking Success (page 76)*, presents examples of how logistics professionals are working together with carriers and logistics service providers to pinpoint problems and find solutions. We identify seven different logistics silos, then provide topical overviews and case study evidence that demonstrates how supply chain partners are gain sharing.

Perry Trunick's article, *Sorting Through Materials Handling Decisions (page 179)*, explores how businesses are approaching distribution center improvements, inside and out. Effective network optimization can save up to 15 percent of facility and transportation costs. Inside the four walls, inventory optimization can account for another five to 15 percent in savings.

In other cases, gains are truly shared. Truck manufacturer Navistar conceived and implemented a supply chain plan that drove tremendous gains. In 2010 alone, the company identified and implemented 19 separate cost-saving projects, each attacking a specific area of the supply chain with a set of metrics that defines success. Ed Melching, director of global logistics for Navistar, shares his company's successes in *The Wheels of Change (page 131)*.

Finding business gains is especially important when times are tough. At *Inbound Logistics*, we're faced with the same economic challenges as you. Our staff–Michael Murphy, Shawn Kelloway, Mary Brennan, Catherine Harden, Joseph O'Reilly, and Sonia Casiano–did a lot more with less to produce this issue, one of the most successful in our history in terms of supporters. The in-depth editorial, new media, online content, and decision-support tools that go along with the issue make it by far the largest project we've tackled in our 30-year history.

We stocked this issue with more solutions, more choices, and more information to provide the tools you need to gain even more ground as you face your logistics challenges in the year ahead. ■

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DIALOG

LETTERS TO THE EDITOR

Rail Reality

I just caught up with Perry Trunick's In Perspective column *Surviving a Rocky Relationship* (Oct. 2010). Superb job! As one who was in the industry for more than a decade before the Staggers Act was enacted, I think I am qualified to comment on the positive effects of both the 4R and Staggers Acts. I was delighted to see your discussion of the situation.

–Larry Kaufman

Policy vs. Politics

Please refrain from politicizing a very fine, factual, and objective publication with editorials (*Elephants Chasing TIGERs*, Nov. 2010). Doing so detracts from the quality of your magazine.

–Mark Thomas, Hord Crystal Corp., Pawtucket, R.I.

Publisher's Response: Thanks for your feedback. My point was more about policy than politics. For example, here's more bad policy. Just after we received your note, Transportation Secretary Ray LaHood yanked transportation funds away from states that wanted to use them on roads and bridges, and says he is reallocating the money to states that will spend it on high-speed rail projects.

While both political parties have funded high-speed passenger rail projects in the past, the current administration has exponentially increased borrowed funding to meet its goal of getting people out of their cars.

Unfortunately, when you enact policies to get people out of their cars, you also make things more difficult for trucks, damaging our transportation capabilities. The roads don't know if Republicans or Democrats are driving on them. These policies impact every business in America, and especially shippers and others in the transport segment.

It's not about the political party, it's about bad transportation policy.

A Retro-spective

Although many of us pine for the good ole' days when life was simpler, it has taken Ray LaHood and current members of Congress to finally get us there (*Elephants Chasing TIGERs*, Nov. 2010). Why stop at bicycles and streetcars?

One of the greatest transportation achievements of all time was the Erie Canal. By re-opening the Canal, we could put thousands of people to work in construction, boat building, dock handling, and mule farming. Tons of freight could move through the Rust Belt each day with no carbon emissions, no traffic accidents, and no use of non-renewable forms of energy. The best thing about this plan is, bike paths could be built right next to mule paths.

I look forward to the day when I can ride my horse down to the river, hop on the ferry (the bridge fell in years ago), stop at the railyard, and listen to Congressional candidates give their speeches from the back of their rail cars. I look forward to the day when we can remove the 3PL link in the supply chain and depend on our true champions of progress: the Amish.

–Wayne Yoder, Bryan Systems, Montpelier, Ohio

Success Starts With Service

Regarding your December 2010 feature *Managing a Customer-Driven Supply Chain*, I'm inclined to take a stronger position regarding customer service and supply chain management. There are not merely points of overlap between the two. Customer service considerations drive supply chain design and performance objectives.

Distribution network design is a function (with some cost factors) of how customers will and must be served. Metrics and key performance indicators such as perfect orders, fill rates, and misships reflect customer service demands.

To the extent that products may drift toward commoditization, customer service *must* be the competitive differentiator, again forcing network design and performance target solutions.

–Art van Bodegraven, S4 Consulting, Powell, Ohio

10TIPS

STEP-BY-STEP SOLUTIONS

by Deborah Catalano Ruriani

Discovering Savings Through Freight Payment Services

Freight payment services can make it easier to process carrier invoices. They also enhance freight spend visibility, which can drive better strategy and planning. Today's systems often include Web services to help shippers streamline information exchange. Some freight payment systems even deliver mobile access to transportation spend for immediate reporting and decision-making. Discover savings through freight payment services by following these tips from John Stitz, senior managing partner at enVista, an Indianapolis-based enterprise cost-management services provider.

1 **Utilize the service provider's reporting capabilities.** Freight bill audit and payment companies can deliver reports, graphs, and charts showing how much you pay each carrier; computing how much you spend per lane; and comparing transportation modes so you can adjust your spend to improve savings.

2 **Employ the service's transportation management system (TMS) capabilities.** Some freight payment companies offer TMS capabilities that help you select carriers, route shipments, plan loads, and handle delivery notices. This bundled solution could meet several of your business requirements.

3 **Take advantage of reduced labor by realigning responsibilities.** A freight management system should streamline your accounts payable department. Generally, using a bill payment service provider can cut communication between you and your carriers by up to 75 percent. This frees your employees to perform other tasks.

4 **Use data to gain visibility.** Leveraging invoice data allows you to understand shipping trends, carrier performance, and transportation spend by region.

5 **Gain a comprehensive audit.** A comprehensive audit can result in a two- to five-percent savings across all transportation modes. When selecting suppliers, make sure they provide audits that go well beyond service failures and rate errors.

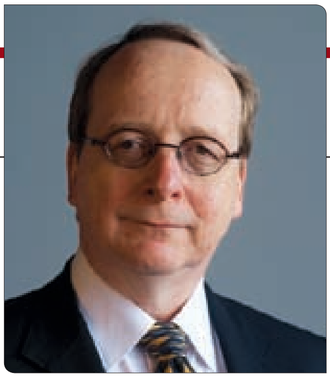
6 **Utilize the query system.** Most freight payment services offer the ability to query on a variety of subjects, including whether there are consolidation and deconsolidation opportunities to eliminate redundancies, or if your company is sending multiple shipments to a customer on the same day or sending shipments to the customer on consecutive days. Discovering these patterns can help you adjust spending and optimize transportation plans.

7 **Ask your supplier to help with international bills.** Invoices for international transportation are complex, with multiple lines and charges. Some freight payment companies can help you audit these bills effectively and customize the system to your requirements.

8 **Transfer administrative cost savings.** Utilizing a freight payment company reduces checks, storage, and postage costs. You can transfer those savings to other services or just enjoy the bottom-line results.

9 **Make sure the freight payment company you select is financially stable.** Check the provider's history to verify how long it has been in business and whether it has the resources to survive an economic downturn. You can't appreciate savings if the company is not around to deliver them.

10 **Ensure the company provides general ledger cost allocation.** The supplier should have systems robust enough to handle complex requests. Make sure you align with a company that has enough experience to provide quality consultancy to help streamline rules. ■



[INPERSPECTIVE]

BY PERRY A. TRUNICK
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Freight Equals Politics

As the population shifts and Republicans gain control of Congress, it is time to strengthen the connection between our economic engine and political tide.

It is no surprise to logistics professionals that the U.S. population has continued to shift, and the West and South have gained population faster than other parts of the country. Demand and shipment volumes should reflect that growth, providing a leading indicator on the results of the just-completed U.S. Census.

The shift might appear subtle because core population centers don't just pack up and move. But the implications of the shift may not be as subtle. Political analysts are already tallying the changes in Congressional representation and offering opinions on what will be in store when the 113th Congress convenes.

While only Michigan and Puerto Rico lost population, slower growth will cost 10 states seats in the 113th Congress. For states including Illinois, Michigan, New York, and Ohio, the erosion of Congressional influence has been a trend. For states such as Texas, which exhibits continued significant growth, the story is the opposite; it has gained seats in Congress as fast as northern states have shed them.

Based on the results of the 2010 mid-term elections, analysts expect that redistricting as a result of the apportionment shift could further affect some House seats held by Democrats. Some states began feeling the effects of that election's power shift right away.

Even before being sworn in, at least three newly elected Republican governors–in Florida, Wisconsin, and Ohio–said they would scrutinize passenger rail projects. Ohio's John Kasich asked President Obama to reallocate the state's $400 million to other transportation infrastructure needs (including freight rail) or return it to the Treasury to reduce the federal budget deficit. It appears the funds will be reallocated to other passenger rail projects.

While logistics professionals reapportion resources in line with demand shifts represented by growth or decline in key markets, it is increasingly important to keep an eye on what is happening with the political equivalent of network optimization.

Is Kasich's view on the need to improve Ohio's transportation infrastructure before considering high-speed passenger rail an asset for logistics? When the state completes redistricting, it could cost two Democrats their seats in the 113th Congress. If the state's governor is inclined to pursue infrastructure improvements and support funding freight rail projects, does that set a similar agenda for Republican members of the House of Representatives?

With border states such as Texas gaining significant representation in Congress, where does that leave issues like the ban on Mexican trucks moving beyond the immediate border zone? On the other hand, will NAFTA-friendly projects face a brighter prospect with more Texas votes in Congress and fewer votes from traditional manufacturing states?

Deep in the roots of the political discussion that looks ahead to the 2012 Presidential election lie the green shoots of some significant logistics issues. In the end, the top 10 population states–California, Texas, Florida, New York, Illinois, Pennsylvania, Ohio, Georgia, Michigan, and North Carolina–still carry more than 90 percent of the Electoral College votes needed to elect a president. These states also represent some of the most important freight origins, destinations, and infrastructure.

If freight equals commerce, and commerce drives economic growth, and economic growth is needed to earn the votes to gain political power, then perhaps freight equals politics. The recent mid-term election and U.S. Census results could open an opportunity for transportation and logistics issues to be heard and addressed. ■

READER PROFILE

by Merrill Douglas

Making a Clean Sweep

When the U.S. Marine Corps made Eric Cohen a supply officer, he felt crushed. "I pictured myself passing out chem lights and toilet paper," he says. It was not the macho role he had imagined when he joined the service.

"But it was one of the best things that ever happened to me," Cohen adds. At age 24, tasked with supplying an engineer batallion, he was in charge of 28 marines and a $1-million budget. "You can't even rent a car when you're 24," he notes.

In addition to providing rewarding work, Cohen's military logistics experience served him well when he left the Marines to enter the civilian workforce. Today, he's vice president of logistics at Waxie Sanitary Supply, a regional distributor of cleaning products and equipment. Based in San Diego, Waxie sells its products to commercial, industrial, contractor, and institutional customers through 21 inventory centers in nine western states.

Cohen has responsibility for the operations managers who work in the company's 10 distribution centers. He works with them to control costs, improve service, and manage human resources. He's in charge of distributing product

WAXING POETIC

NAME: Eric Cohen

TITLE: Vice president of logistics

COMPANY: Waxie Sanitary Supply, San Diego, since 2000

PREVIOUS EXPERIENCE: Captain, supply and logistics officer, U.S. Marine Corps; factory representative, Volvo Cars North America; assistant director of logistics, Kaiser Permanente; corporate operations director, senior director of logistics, Waxie Sanitary Supply

EDUCATION: University of California, San Diego, B.A. in history, 1991; Penn State University, supply chain management certificate, 2002; Florida Institute of Technology, Masters in Business Logistics, 2010

The Big Questions

What do you do when you're not at work?
I spend my weekends surfing and hanging out with my wife and our two boys. My son and I are learning to play the electric guitar, and we're restoring a '68 Camaro.

Ideal dinner companion?
Ulysses S. Grant. I'd like to find out how he was able to take over the Army of the Potomac after so many failures, turn it into a successful organization, and win the Civil War.

What's in your laptop bag?
Besides my laptop and wireless stick, there's not much. I store everything on my smartphone.

Business motto?
Make a difference. Go out there and innovate.

If you didn't work in supply chain management, what would be your dream job?
Running a charter sailing company to take people snorkeling, fishing, and surfing.

from the inventory centers to customers, which also makes him responsible for a 145-truck private fleet and managing the company's relationship with UPS and other carriers. He also oversees Waxie's transportation management software.

When the company adds a new site, Cohen chooses the location, designs the warehouse layout, determines how product will be stored and what equipment the facility needs, and manages equipment leases.

Getting a new facility running was especially challenging when Waxie moved from one building in Denver to a new facility one mile away. To complicate the situation, Waxie had just acquired another company, and it needed to shift that operation to the new inventory center.

Cohen and his team spent 18-hour days moving inventory and racking, but the city hadn't yet issued a permit to install the racking in the new building.

"The products and equipment were spread out across the warehouse," he says. Then the team spent a weekend moving the acquired company into the new facility. "But we were ready for business on Monday," he notes.

One ongoing challenge for Cohen is finding the sweet spot that gets customers the products they want, when they need them, without pushing fulfillment costs too far. "Having a high fill rate is important," he says. But it's impractical to stock every product a customer might want in every location. Finding the right balance is key.

During his years at Waxie, Cohen has gradually learned to treat work not as a sprint, but as a marathon. Devising a solution, then fighting for approval to implement it quickly, isn't always the best course.

"You plant and cultivate the seeds, and let them grow," Cohen says. "Sometimes they grow in surprising ways." ■

LOGISTICS knowledgebase©

Brad Constantini, Principal/Executive Vice President, Comprehensive Logistics Inc.
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Protect Your Supply Chain From Merger Mania

In recent months, several third-party logistics (3PL) providers have merged to form large conglomerates, and consolidation in the 3PL market is likely to continue. Although the trend is not new, the New Year is a good time for companies to take a closer look at 3PL relationships and consider how they impact supply chain performance.

When companies merge, there's always a risk of service disruption caused by culture clashes, integration hurdles and a host of other issues. Although the acquiring company typically paints a rosy picture, things can and do go wrong. A study conducted by U.K.-based SCALA Supply Chain & Logistics Consulting revealed that only 10% of companies that purchase logistics services feel that mergers and acquisitions among 3PL providers translate into better capabilities or customer service. And, while 97% of the merged provider companies claimed synergy benefits, and 83% claimed reductions in operational costs, just 24% of their customers received synergy benefits. Only 28% said they experienced cost benefits.

Because of these gaps between promises and results, supply chain consultants often advise companies to wait until they clearly understand the impact of the merger before renewing their logistics contract.

Companies that do not currently outsource logistics processes but are considering it can also prevent potential problems by looking for 3PL providers that offer the attributes proven to contribute to successful partnerships.

SERVICE: IT'S STILL NUMBER ONE

Chief among those characteristics is service quality, which can be measured in terms of openness, transparency, good communication, flexibility and collaboration.

Research conducted in recent years has shown that lean, mid-size 3PLs have an edge over mega-3PLs when it comes to customer relations. Lean 3PLs can be more nimble and responsive to market needs because their scale allows for close communication with clients.

With fewer layers of bureaucracy to slow them down, mid-size 3PLs can modify, adapt and execute quickly and on demand. They can transform their service offerings and operational capabilities at a moment's notice since they aren't tied to the one-size-fits-all approach that drives some of the larger providers.

Lean 3PLs also spend more time actively managing customer relationships because they view each customer as a valued strategic partner, not just a number. Disciplined process controls, combined with a collaborative, multidisciplinary approach to problem solving, help customers reduce costs while ensuring accuracy, quality and on-time performance.

CONTROL ISSUES

Another attribute that leads to successful partnerships with 3PL providers is the ability for customers to monitor and manage the supply chain remotely.

Companies should look for 3PL providers that allow them to maintain control over their logistics processes while still receiving the benefits of outsourcing. Reputable 3PLs will provide customers with open access to item-level details 24 hours a day. Advanced information systems provide complete visibility into intricate logistics processes—from first mile to last. The ability to monitor every process step helps companies confirm that the 3PL provider's operations are contributing to their strategic business goals.

A lean, mid-size 3PL like **Comprehensive Logistics Inc. (CLI)** takes transparency a step further by making technology an integral part of the customer relationship. Using the company's sophisticated, Internet-based intelligence tools, CLI's clients can access real-time logistics data on demand. CLI's partners don't just "see" their supply chains; they see *through* them. They can view the flow of raw materials, work-in-process inventory and shop-floor processes as they happen. They can monitor key performance indicators and receive alerts when shipments deviate from established processes. As a result, they maintain tight control over their supply chains while still receiving the benefits of outsourcing.

In these uncertain economic times, one thing is certain: The 3PL landscape will continue to change, and mega-3PLs will continue to emerge. For better or worse, customers won't be able to control the outcome.

However, they can and should insist that their business partners commit to full transparency. In addition to seeing operational details, visibility also means having a clear view of how a merger will impact service levels.

After all, the stronger the 3PL provider—and bigger doesn't necessarily mean better—the more resilient the supply chain. And that will lead to a sharper competitive edge and improved bottom-line results.

To learn more about how CLI helps companies reduce logistics costs and improve service—while maintaining control over their supply chains—call **800-734-0372, ext. 288,** e-mail **info@complog.com,** or visit **www.complog.com.**

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ACHIEVING COMPETITIVE ADVANTAGE:

How the Right 3PL Partner Can Help You Dominate Your Market

In today's marketplace, all too often there is a disconnect between 3PL performance and clients' expectations. As established 3PL companies mature and less robust players continue to enter the market, the gap between client expectations and 3PL deliverables continues to grow. Most 3PL value propositions focus primarily or exclusively on a client's financial performance. Profit is the end result of a well-run company. But a company's true objective is usually a much broader cause, often centered on meeting a market need by delivering a valued product or service to customers with excellence. Can a 3PL really aspire to this lofty goal: not only saving money for its clients, but helping to establish practices and processes that support long-term business value creation?

The answer is yes, and the change in mindset should begin with the client implementation. Unfortunately, client start-ups for most 3PLs look more like projects than processes. Therein lies the first significant gap in expectations. The implementation focus is chiefly designed to improve financial results (objective: capture the identified savings, and do it fast), but generally fails to put in place strategies to better the overall performance of the client's supply chain. Shifting to this more comprehensive understanding of enterprise value is not instinctive to many 3PLs, but it is an essential change in approach.

The second expectations gap frequently arrives after the start-up phase, once the 3PL has landed its initial commitments. The 3PL may provide some settlement processes and basic reporting, but then typically moves on to the next new client opportunity. The client is left unfulfilled in regard to the promised "logistics support." So, what's the key to eliminating the 3PL expectations gap? **...Tangible, measurable, continuous improvement.**

At Transportation Insight, we believe each client needs and deserves a comprehensive strategy that achieves and sustains value by providing continuous improvement across the complete supply chain, and perhaps even other key areas of their organization. Put simply, our mission is to help companies across North America move from good to great, then from great to dominant. We expect our services to position clients with a true competitive advantage in their marketplace. We tilt the playing field to the advantage of our clients. In doing so, long-term value creation across the client's products or services flows naturally and profits soar.

The road to value creation should always begin with a detailed assessment of a client's existing supply chain, with emphasis on understanding key departmental success drivers and metrics (mapping the "current state"). Through this approach, we gain a full understanding of a client's current state and how they define supply chain success. It also enables the creation of a customized future state—a "Value Roadmap" which illuminates areas of opportunity and allows the client to fully understand the potential for improvement. With this described approach, a good portion of the disconnect between client and 3PL expectations is eliminated, and the initial implementation becomes the beginning of a value creation process rather than a cost-reduction project.

The Value Roadmap launches a continuous improvement approach that is essential in today's competitive global marketplace, where change is accelerating and complacent companies lose the race. On-going "logistics support" from your 3PL should come in the form of frequent, structured reviews of current supply chain practices and goals. These reviews should identify continuous improvement opportunities and the means for implementation.

Our approach to client partnership is not only about planning and strategy—it's also about execution. We believe total outsourcing of supply chain execution yields less than optimum results; so we offer a Co-Managed approach. By combining the existing knowledge and skills of the client's team with the strategic consultative expertise of the Transportation Insight team, true synergy is generated (1 plus 1 can equal 3, 5 or 10). With a Co-Managed solution, clients receive the benefit of our knowledge, best-in-class practices and industry-leading technology, while maintaining final control over all supply chain decisions.

To fully close any remaining expectations gap, 3PLs should provide clients with an optimal view into not only the client's supply chain, but also other areas of their business. At Transportation Insight, we provide unique and actionable business insight to our clients, including information that the client cannot efficiently obtain from within their own organizations. After deployment of our logistics solution, our engineers provide clients with an on-going, proactive analysis of their existing and emerging supply chain needs, with continual benchmarking and measurement of all KPI's.

When the expectations gap has been eliminated, a full-service logistics provider can venture into the prized realm of exceeding clients' expectations. For our company, that means being a truly different kind of 3PL by offering strategies well beyond the traditional supply chain. Our clients embrace our value-added offerings, including services such as LEAN consulting, Organizational Development and Supply Chain Sourcing. If you would like more information about how Transportation Insight can move your company from good to great to dominant, please contact us at 828-485-5000 or www.transportationinsight.com.

NOTED

THE SUPPLY CHAIN IN BRIEF

SEALED DEALS

ZF Steering Systems has partnered with **LeanCor** to manage lean logistics engineering and transportation within the company's supply chain. The 3PL will be responsible for helping the automotive component manufacturer develop rigorous measurement systems to eliminate waste, and reduce inventories and costs.

AstraZeneca, a global research-based biopharmaceutical company, is using **Axway's** track-and-trace system to collect product security data for medicine packs in its global repository. The objective is to combat counterfeiting and improve patient safety. AstraZeneca operates 10 sites and 33 production lines that feed serial numbers into the system, with additional sites and lines planned for 2011.

The U.S. Department of Defense (DoD) awarded **U.S. Bank** a new contract for processing transportation payments—extending a relationship that dates back to 1997. Last year, the bank processed freight payments of $3 billion and household goods payments of $1.5 billion for the DoD.

ARCOP, a food cooperative for Arby's restaurants, has partnered with **Transplace** to manage shipments throughout the United States, providing transparency for day-to-day operations decisions. The 3PL's transportation management system provides shipment lifecycle visibility, reduces direct transportation costs, and improves overall operational efficiencies.

(continues on page 30)

sound*byte*

"China has poured billions into solar and wind. It wants to dominate the industry. Unless the United States responds with an energy plan, those jobs will be going to China."

–John Hanger, secretary of the Pennsylvania Department of Environmental Protection, commenting on the U.S. wind and solar power industry's potential, and the need for government subsidies to grow renewable energy sectors.

SEALED DEALS: Electra Bicycle Company has expanded its outsourcing contract with **LeSaint Logistics** to include the 3PL's Romeoville, Ill., warehouse. The facility expansion aims to improve the manufacturer's infrastructure and enhance its sales service system for a large part of the United States. Electra, which has been working with LeSaint in California and South Carolina to execute warehousing, inventory management, order processing, shipping control, and reporting, has reduced transit times by 50 percent using the Romeoville facility.

SEALED DEALS

Systems Services of America (SSA), a distribution supplier for quick service, casual family dining, and regional restaurants, has entered into a new three-year contract to provide exclusive food service distribution for **Farmer Boys Foods**. SSA will continue servicing the chain's restaurants in California and Nevada.

▼ **Viterra Australia**, the Asia Pacific hub of the Canadian food ingredients company, has signed a subscription agreement to use **CombineNet's** advanced sourcing application platform. The technology provider will help the food supplier speed and simplify the creation, launch, and management of sourcing events.

The State of Iowa Alcoholic Beverages Division has chosen **Robocom Systems**, a provider of supply chain execution software, as its supply chain partner. The agreement includes the implementation of Robocom's warehouse management, Web-based order management, and labor management systems.

recognition

► UK grocery chain **Sainsbury's** won **Best Retail Initiative** at the BBC Radio 4 Food and Farming Awards for helping its farmers reduce their carbon footprint and achieve financial savings. Sainsbury's was the only supermarket short-listed in any category. The award reflects Sainsbury's commitment to working with its producers to build a sustainable supply chain.

The Chamber of Shipping of America recognized **Horizon Lines** for **outstanding achievements in environmental excellence**. With a combined total of 76 consecutive years of operation without any environmental incidents, 12 Horizon Lines vessels were honored with this recognition.

The Dutch Association of Investors for Sustainable Development has, for the third time, recognized **Philips'** achievements in the area of **responsible supply chain management**. The electronics manufacturer ranked first among the 40 largest publicly listed Dutch companies benchmarked for this award. Philips' thorough and transparent reporting methods were referenced as winning factors, along with the company's dedication to support suppliers in improving their sustainability performance.

Jagged Peak, a technology and outsourced e-commerce and supply chain services provider, received the **2010 Excellence in Service award** from the Tampa Bay Technology Forum. The recognition honors technology innovation within the Florida region.

m&a

Ryder System signed an agreement to acquire **Total Logistic Control (TLC)**, a subsidiary of SUPERVALU and provider of supply chain services to U.S. food, beverage, and consumer packaged goods manufacturers. TLC operates 34 facilities comprising 10.6 million square feet of dry and temperature-controlled warehousing across 13 states. The company's management and employees will continue in their existing roles after the acquisition is finalized, according to Ryder.

Kerry Logistics has acquired a majority shareholding in **ADCO Shipping and Forwarding**, a privately held company headquartered in Rotterdam, The Netherlands. As well as inbound de-consolidation and outbound container loading, ADCO operates warehousing and distribution services from its warehouse in Rotterdam, enabling Kerry to offer inbound and outbound supply chain services throughout northern Europe.

Peoples Services, an Ohio third-party logistics and warehousing provider with bulk storage expertise, recently acquired Akron-based **Terminal Warehouse**. The combined entity operates approximately four million square feet of distribution space across Ohio, West Virginia, Virginia, North Carolina, South Carolina, and Tennessee.

[INFOCUS] **NOTED**
THE SUPPLY CHAIN IN BRIEF

GREEN SEEDS: FedEx has joined with **Cologne Bonn Airport**, Germany, to inaugurate its new solar-powered Central and Eastern Europe hub. The hub's roof features the largest FedEx Express solar power installation worldwide and represents one of the largest rooftop solar installations in North Rhine-Westphalia, producing about 800,000 kilowatt hours per year. Including the Cologne hub, FedEx operates five on-line solar facilities, which reduce annual carbon dioxide emissions by 4,319 tons.

GREEN SEEDS

Carrier Transicold presented the world's first natural refrigerant technology for container refrigeration at Intermodal Europe 2010. The company's NaturaLINE design unit incorporates a container refrigeration system that uses CO_2 in place of conventional synthetic hydrofluorocarbon refrigerants, which have higher global warming potential. Carrier has placed demonstration units in service for around-the-world tests with Hamburg-based ocean carrier Hapag-Lloyd. In 2011, it will extend the program with full field trials.

The UPS Foundation awarded nine grants totaling nearly $2 million dedicated to environmental programs and organizations worldwide. The endowments address issues such as climate change, renewable energy, and resource conservation. Awards are provided to both U.S. and international organizations based on recommendations by UPS employee committees.

UP THE CHAIN

TOTSY, a private sale site exclusively dedicated to children's products, appointed **Kennedy O'Grady** as vice president of operations. With more than two decades of logistics operations experience, O'Grady is responsible for managing day-to-day operations, increasing efficiency, and reducing costs.

Darryl Branch has been promoted to senior vice president, logistics and integration services for **Tech Data**, a technology products distributor. Branch is responsible for the operations and performance of Tech Data's six U.S. logistics centers, in addition to transportation, quality assurance, and engineering teams supporting the company's extensive distribution infrastructure.

DCI Cheese Company, a Wisconsin importer, manufacturer, distributor, and marketer of specialty cheeses, hired **Joe Scheske** as senior portfolio supply planner. In his new role, he manages the supply chain for a major DCI account. Previously, Scheske held senior-level logistics and supply chain positions at Plexus Electronic Assembly, Fox River Paper/Neenah Paper, Miller Brewing, and Mercury Marine.

Simmons Bedding named **Mark Baron** executive vice president of operations. He is now responsible for manufacturing, technical services, and supply chain operations across the company's 20 production facilities. Most recently, Baron was senior vice president of Hill-Rom, a manufacturer and provider of medical technologies for the healthcare industry.


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TRENDS

SHAPING THE FUTURE OF LOGISTICS

Supply Chain Influences That Have Made Their Mark

by Joseph O'Reilly

Supply chain innovation is as old as history. Consider the very beginning, that first impulse to sow seed. Flint-sharpened sticks enabled hunters and gatherers to stop roaming, then grow and harvest staple crops. Animal husbandry soon followed. This created an impetus to store and transport goods. Surplus became capital. Capital created power and culture. Power enabled traders to expand culture. Powerful trading cultures grew into mass consuming blocs that built great transportation networks linked to new sources of supply and demand.

More recently, an industry blog attempted to document the 10 greatest supply chain innovations of all time–an admirable, if flawed, task. There's no argument against Henry Ford's assembly line, Malcom McClean's container, and the Toyota Production System making the cut. But there are inevitable lapses. What about standard time? In the mid-19th century, U.S. railroads gave shippers and consignees a benchmark for measuring what was and wasn't just in time.

Back to the beginning: where does agriculture rate? The impulse that eventually spun ideas for vertical integration and motor freight? The demand-driven forces that inspired Ford, Toyota's Taichi Ohno, and countless others?

Time is a tricky thing. So are top 10 greatest supply chain innovation lists that neglect broader influences. The past is too long and time too short to try and compartmentalize all of the many transportation and logistics achievements that have evolved. But media has a penchant for counting down the "greatest"–especially as a new year unfolds.

Inbound Logistics is no different. But we'll take our chances with a far shorter measuring stick. So much has changed in the past decade that considering the recent forces shaping today's supply chain serves a few purposes.

For one, retrospection offers perspective. The past provides a baseline for thinking about fundamentals, considering new and different avenues toward innovation, and resisting the haste that often takes things for granted.

Secondly, businesses in today's economic environment have every reason to compare before and after, measure performance, realign goals, then do it again. Benchmarking has become a supply chain standard.

We decided on a similar course by offering a brief look back at supply chain stimuli that have left their mark over the past decade. To come up with our short list, we solicited shippers, carriers, academics, and consultants to share their perspectives on important change agents between 2000 and the present.

We didn't base our criteria on innovation and technology alone–nor did we try and rank what was "greater." We explored broader dynamics that have stretched and squeezed logisticians externally in the supply chain and internally within the organization. Within these "influential" call-outs, we drill down The Notables–innovations and progressions that have come about as a result.

THE 10 GREATEST SUPPLY CHAIN INFLUENCES OF THE PAST 10 YEARS:

DEMAND-DRIVEN LOGISTICS. *Inbound logistics* continues to play a large role in global supply chains as businesses explore strategies to reduce inventory, and control transportation and costs. However and wherever demand trends and supply moves, demand-driven logistics remains a common denominator and competitive differentiator.

RISE OF THE 3PL. Global competition provided ample incentive for businesses to outsource non-core transportation and logistics functions to a growing legion of third-party logistics providers. The 3PL explosion has yielded myriad types of non-asset and asset-based service providers, from global expediters and freight forwarders to niche vertical transportation companies. Global sourcing and selling, technological innovation, and increasing supply chain sophistication have given manufacturers, retailers, wholesalers, and government little pause to align their organizations with companies that can execute inside and outside the four walls, globally and domestically.

The Notables: 4PLs, LLPs, nearshoring, vested outsourcing

"It is an innovation that a company such as UPS has managed to work the word 'logistics' into a mainstream media ad campaign."

–**Shannon Boyd,** director of marketing and business development, BNSF Logistics

TERRORISM. Industry's response to terrorism has been widespread and continues to shape the way shippers and service providers manage their supply chains. Supply chain security and contingency planning used to be business process improvements and value-added services. For most companies today, they're business as usual.

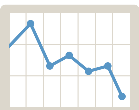
The Notables: C-TPAT, TWIC, 10+2

MASS COMMUNICATION. The Internet revolution of the 1990s gave way to a media storm that saturated the market with new technologies and communication applications. From a macro perspective, these innovations changed the way consumers buy and businesses sell. Today, e-commerce channels compete with brick-and-mortar retail pipelines, forcing distribution strategies to follow changes in demand. In the logistics segment, advancements in information reporting and sharing–from personal communication devices to cloud computing and social media–have

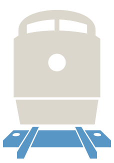
radically amplified the capacity and speed with which companies aggregate and disseminate data across the world in real time.

The Notables: Cloud computing, social media, wireless connectivity, GPS navigation

RECESSION. A decade book-ended by economic distress pressed businesses to lean on transportation and logistics as a means to squeeze out costs and add value and services that cash-strapped consumers were willing to buy. In times of want, efforts to drive creativity and innovation, efficiency and economy, are magnified.

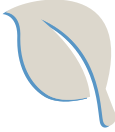


INTERMODALISM. In the transportation space, the growing efficacy of intermodal transport has swiftly changed expectations for how freight moves. The conversion of motor freight to rail, largely due to service stabilization and expansion among U.S. railroads and capacity and cost pressures on the ground, has allowed shippers and consignees to consider alternative transport options. At the ports, and farther inland, mixing modes allows users opportunities to circumvent congestion, rationalize labor need, and reduce fuel costs and carbon emissions.



The Notables: U.S. railroads, inland ports, barge transport

SUSTAINABILITY. There's no red light for the green movement. In spite of economic recession, industry has latched on to the ethos of supply chain sustainability and all its trappings. Partly driven by mass media exposure, corporate citizenry, and supply chain best practices, companies are all too willing to do more with less. The business value proposition is driven by consumer demand as well as efficiency and economy. From the food chain to renewable energy development, at the point of sale and the raw material source, green innovation continues to raise expectations.

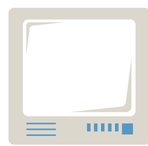


The Notables: The EPA SmartWay program, carbon emissions calculators, wind and solar energy, LEED certification

> "The greatest innovation of the last decade is that we are finally getting to the point where businesses recognize the unbelievable benefits of supply chain processes and execution."
>
> –**Frank Breslin,** dean, Institute of Logistical Management

SOFTWARE-AS-A-SERVICE (SAAS). While the maturation of core logistics technologies such as TMS and WMS has held industry captive, the real technological spark has been the method of deployment. Software-as-a-Service (SaaS) and other cloud-based solutions have transformed the market. It allows businesses of all sizes to tap targeted and sophisticated solutions that easily integrate with legacy systems and among global partners. More telling, SaaS deployments have created a common platform for combining logistics tools across core functions, building stronger synergies and better visibility while providing immediate return on scalable investment.

SUPPLY CHAIN GOES MAINSTREAM... SORT OF. Network television advertising campaigns... College football bowl games... University degrees and vocational programs... Walmart, Amazon, Dell... In so many ways, supply chain is pushing its way into the public arena. Oddly, its climb up the corporate ladder still remains a daunting task.



WAR. U.S. involvement in the Afghanistan and Iraq theaters has had an immense impact on the transportation and logistics sector, from both commercial and defense industry perspectives. An abundance of talent has been mustered to manage global shipments of armaments and requisite materiel in support of the war effort. The Department of Defense has benefited greatly from the expertise and lift capacity of its private-sector partners. In return, the transport and logistics sector has a fertile hiring ground for highly skilled labor.

Cautious Pessimism Pervades NITL Conference

The mood at the November 2010 TransComp Exhibition and Intermodal Expo in San Diego can best be described as cautious pessimism.

While freight volumes had been improving or stabilizing in the weeks leading up to the combined meetings of the National Industrial Transportation League (NITL), Transportation Intermediaries Association (TIA), and the Intermodal Association of North America, there was ample cause for concern about capacity, and near- and mid-term outlooks.

As a result of these concerns, subtle changes are taking place in the logistics segment, if a roundtable discussion hosted by TIA is any indication. One manifestation is a stronger focus on strategic carrier relationship management in place of the transactional approach favored by many brokers. The difference can be described as a move from simply finding capacity to keeping it.

During the discussion, brokers acknowledged the importance of keeping an eye on payables to ensure carriers are being treated fairly. "Trust your carriers as much as possible, and don't tighten the screws too much while the pendulum is on your side, because it will swing back," said one broker.

Some see that pendulum ready to swing, and swing big. Lending some gravity to the situation is CSA 2010, the Carrier Safety Analysis program that more closely monitors driver safety and fitness. Estimates are that the effects of CSA 2010, combined with other regulatory changes and driver retirements, could lead to a 10-percent reduction in the number of qualified drivers available to move freight.

CARRIER SELECTION: WHO'S LIABLE?

As recordkeeping and reporting requirements roll across the industry, concern is growing over liability for carrier selection. That concern, expressed during the TIA broker roundtable, is also shared by shippers.

Using a broker doesn't insulate a shipper from liability, but brokers aren't off the hook, either. With carrier safety information publicly available–down to driver records–it is important for brokers and shippers to establish written carrier selection safety and fitness protocols, and to document that compliance.

CSA 2010 information was made publicly available in December 2010. Brokers and, at a slower pace, shippers, have begun the struggle to gain a solid grip on safety and compliance, along with potential liability.

Solutions, such as safety scorecards, are emerging. "One key is real-time data on CSA safety scores," said Jeff Tucker, CEO of QualifiedCarriers.com, a provider of transportation compliance and safety management tools, in an interview on the exhibit floor.

"Safety ratings and other information, such as operating authority and insurance, have always been available, but the new, enhanced recordkeeping adds much more information and a need for greater timeliness," he noted.

Shippers need powerful tools for day-to-day monitoring and decision-making, not simply reports for review before finalizing or renewing carrier contracts. In fact, contract compliance information becomes part of the database and is measurable. Bulletins and alerts can indicate not only when a carrier is approaching a shipper- or broker-set CSA compliance threshold, but also when contracts are expiring and other performance and compliance information.

> Trust your carriers as much as possible, and **don't tighten the screws too much** while the pendulum is on your side, because it will swing back.

One issue associated with CSA is that carrier data was not available in advance. One source suggests as many as 35 percent of carriers won't be qualified once CSA scorecards are implemented. In addition, driver safety issues stick with a carrier for two years, even if the driver is no longer employed by the company. So, the data behind a score becomes more important moving forward.

Brokers and shippers are being urged to pre-qualify carriers. Larger shipper companies have been aware of the issue and are taking steps to establish CSA compliance thresholds, but a large number of shippers–especially smaller companies–were unaware of the potential risks associated with CSA 2010.

Walking the exhibit floor and talking to carriers and third-party logistics providers, there was unanimous agreement that the combination of CSA 2010 and potential revision of Hours-of-Service rules would result in serious carrier capacity reductions. But, said one broker, "if shippers hear a constant refrain without a solid foundation for why carriers were expecting tighter capacity, they could easily ascribe it to wishful thinking by carriers who want to recoup the rate erosion that occurred during the economic downturn."

The conference's outlook, therefore, was less than buoyant, with little celebrating for returning volumes. The industry is looking ahead to a more complex regulatory regime, tighter capacity, and higher rates, though not necessarily higher margins.

–Perry A. Trunick

New Year Resolutions, Supply Chain Revolutions

As businesses enter 2011 optimistic the economy will take a turn for the better, some are hedging hope with a dose of reality—that a new normal requires supply chain scalability to ensure better responsiveness to demand.

Two years removed from what seemed like terminal engine failure, Ford Motor Company is investing $600 million to overhaul its Louisville production plant in an effort to diversify and get leaner. Currently, the plant is responsible for producing the Ford Explorer, but after extensive renovations, it will be used to build a newly redesigned version of the popular Escape compact SUV. Upon completion, the plant will not only operate two shifts instead of one, but it will also employ 1,800 additional workers.

After an extensive tune-up, Ford's Louisville production plant will be used to build a redesigned version of its popular Escape compact SUV.

Ford envisions the factory will become its most versatile manufacturing operation, producing small cars, SUVs, and wagons—assembling what consumers are buying rather than mass-producing units for discount. With better supply chain efficiency, the automotive manufacturer hopes to build upon the 21-percent increase in U.S. sales it experienced during 2010.

The automotive sector isn't alone in optimizing the supply chain for bottom-line improvements. Following third-quarter 2010 financial results, Krispy Kreme Doughnuts reported that lower freight and distribution costs helped boost annual revenues by $6 million, pushing the company back into the black.

The company is known for its vertical integration. Krispy Kreme Supply Chain, a separate division, produces doughnut mixes and manufactures doughnut-making equipment, which all factory stores, both company and franchise, are required to purchase. It also sells other ingredients, packaging, and supplies.

Higher sales by company and franchise shops drove profit improvements in the Krispy Kreme Supply Chain segment, with international franchise business continuing to exceed expectations.

Elsewhere in the food chain, Pinnacle Foods Group recently consolidated manufacturing for its Nalley's Chili and Brooks Beans from Tacoma, Wash., into its Armour canned meat plant in Fort Madison, Iowa—a production stew designed to improve long-term brand growth.

The company's acquisition of Birds Eye Foods in December 2009 created surplus production capacity, with two meat canning plants processing similar products. The plant consolidation in Fort Madison creates a more efficient supply chain as the facility is geographically situated closer to source ingredients.

To facilitate the move from Tacoma, Pinnacle Foods is adding a 17,000-square-foot extension to the Fort Madison plant. In total, the company intends to invest approximately $20 million.

Weaving a Common Thread

Memphis-based Dunavant Enterprises, formerly one of the world's largest cotton merchandisers, recently spun its global logistics division into the company's core operating function. *Inbound Logistics* caught up with Bill Dunavant, CEO and president, and Richard McDuffie, COO, to discuss the transition and the company's new direction.

IL: Describe the process of transitioning from a cotton merchant to a third-party logistics provider.

Dunavant: It wasn't an impulse decision, but rather a natural progression of how we planned to evolve our business strategy. We were already a major logistics provider for commodities, specifically cotton. We sold the cotton trading division, but our logistics operation continues moving forward into other products. We have been doing this for more than 40 years.

We have moved millions of shipments across the globe and understand the challenges of delivering to both inbound and outbound customers. We have contacts and resources around the world to help us solve complex logistics problems. This is nothing new for us, as we have an established organization culture and requirement to respond rapidly to changing market conditions.

As we transition to a 3PL, the Dunavant Enterprises team is the same; the processes and systems are the same. We are continuing to build and expand throughout the industry, but we are using the same infrastructure that made us successful throughout the years.

IL: In terms of debuting as a 3PL, what are the advantages of being located in Memphis?

Dunavant: Memphis was the cotton capital of the world for decades; today it is one of the logistics capitals of the world. We are privileged to operate businesses in both areas. Memphis continues to expand its leadership role in global logistics with the world's leading freight airport, the fourth-largest inland U.S. port, the third-busiest trucking corridor, and the third-largest railroad center in the country. In addition, Memphis has enormous warehousing and distribution operations supporting all these transportation modes.

IL: What specific industries will Dunavant target?

McDuffie: We will focus on all commodities, retail, energy, consumer staples such as food products, and unsalable

general merchandise. We will continue to focus on commodities because of our unique knowledge of adding value through our global supply chain experience.

During the past several years, we have recruited a depth of experience in specific industries, as well as the expertise to move and redistribute unsalable merchandise. Lastly, cotton is a by-product of raw materials that serve retail, so we deal with numerous manufacturers that support global textile manufacturing.

IL: Dunavant has a pedigree in freight brokerage. In today's market, how does this work in your favor?

McDuffie: It works very well. We have logistics partner relationships that go back as long as 25 years. We have a history of moving a significant amount of product in a short time due to the cyclical nature of commodities.

To successfully transition from a cotton merchant to a 3PL, Dunavant has recruited a **depth of experience** in specific industries.

–Richard McDuffie, *COO, Dunavant Enterprises*

Environmental Pressure Cooker

Global companies are under increasing pressure to identify green alternatives for managing operations risks, particularly when it comes to the supply chain. Organizations must address "highly charged" climate change and sustainability risks as they seek to eliminate waste from their supply chains, according to an Ernst & Young report.

The report warns that demand is growing from a proliferation of supplier qualification and scorecard programs that large corporations employ to examine their carbon footprints. Consumers, investors, analysts, and other stakeholders also are demanding transparent information about product and service lifecycles.

"Supply chain and environmental professionals share a common goal: to reduce waste," says Steve Starbuck, Americas leader, climate change and sustainability services for Ernst & Young. "While these supplier programs could be seen as a burden, they are actually great opportunities to cut costs while reducing an organization's environmental footprint.

"Sustainability risks–once identified and managed–can help foster customer relationships and yield competitive advantages," he adds.

Ernst & Young advises supply chain operations professionals to assess climate change and sustainability reporting needs, including evaluating data integrity and alignment across the supply chain. In addition, they should monitor and assess existing or potential government regulations. They also need to make sure climate change and sustainability risk are included in the corporate risk register and risk management policies.

The five highly charged climate change and sustainability risks to supply chain operations, according to Ernst & Young, are:

1. Strategic. For many companies, the supply chain increasingly provides an opportunity to improve competitive advantage, and reduce cost and waste. Leading companies understand this link, particularly as stakeholders become more interested in social and environmental costs.

2. Compliance. Organizations that are required to comply with green supplier programs now need to track data on energy use and make the information available for audits. On the flip side, if an organization has instituted a green supplier program, it will need new processes to track and monitor supplier compliance and to use the data to drive decision-making.

3. Financial. Supply chain issues impact an organization's financial strategy in multiple ways, including: opportunities to cut costs, potential cash management and liquidity implications as a price for carbon is set in different jurisdictions, and new due diligence requirements for acquisitions. Additionally, as companies increase public disclosures in non-financial reports, CFOs and audit committees are exercising more oversight.

4. Reputational. Many companies are implementing supplier qualification programs to ensure they do business with suppliers that share their values, which helps them manage brand and reputational risk. As such, these companies may conduct regular supplier audits, which might include emissions, waste, and safety guidelines compliance.

5. Operational. Spare parts inventory management, manufacturing equipment utilization, and planned maintenance are just a few areas where efficiency could be improved. Other operational areas to assess include: unplanned downtime, reduction and innovative uses for manufacturing waste, transportation, logistics, and facilities. ■

AIAG Pilots New Ocean Shipping Guidelines

New communication guidelines presented by the Automotive Industry Action Group (AIAG), a not-for-profit based in Southland, Mich., aim to help ocean shippers identify waste, errors, and miscommunication across intercontinental supply chains.

The guidelines are based on the findings of AIAG's Material Offshore Sourcing (MOSS) project, which studied ocean-going supply chains–including order, transport, and customs processes–to identify the root causes of errors that lead to shipping delays.

Among the findings:

- An estimated 15 percent of all shipments experience delays due to inaccurate or incomplete data.
- Most errors stem from the manual input of data, which is often re-keyed multiple times by different parties, and through phone and fax communication.
- North America-based automakers and suppliers may be able to reduce working capital by as much as $1.7 billion if these delays are eliminated.

The new AIAG guidelines, developed by a team of 11 supplier and solution provider organizations led by Honda of America Manufacturing and General Motors Company, are built around a trade collaboration system that uses a cloud-based Internet solution with common message templates. Essentially, every member of a supply chain that adopts the guidelines will have visibility into a shipment at any point in time, and will communicate with one another via a secure Web portal using standardized forms.

Based on the results of the MOSS study and pilot project, AIAG estimates that shippers can annually save up to four percent of the global value of imports, or a conservative estimate of $21 billion, by adopting its guidelines.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GLOBAL

THE WORLD AT A GLANCE

by Joseph O'Reilly

Russia and China: Eurasia's Odd Couple

For two countries that geographically touch and have historically close trade ties, Russia and China are worlds apart in terms of economic vitality. While Russia idly pumps oil for export, leaving its economy vulnerable to global commodity price fluctuations, China is fastidious to a fault, protecting its own economic interests while controlling everyone else's. Still, each country has a common interest in the other's potential, and they both stand to gain from working together–regardless of whether progress is measured in dollars, rubles, or yuan.

China and Russia recently decided to renounce the U.S. dollar and resort to using their own currencies for bilateral trade–a decision that China characterizes not as a challenge to U.S. currency, but rather a reflection of the economic relations between Beijing and Moscow.

The yuan has begun trading against the Russian ruble in the Chinese financial market, while the renminbi (China's monetary denomination of note) will soon be allowed to trade against the ruble in Russia. In aligning currencies, Premier Wen Jiabao and Prime Minister Vladimir Putin are now engaging in further talks about how both countries can benefit from each other's resources.

Russia wants China to pay top ruble for oil; China wants a discount. The world's biggest energy producer and the world's largest consumer will eventually find common ground–connected by a new trans-Siberian pipeline to China's border and a fast-growing intermodal landbridge linking Europe to Asia.

Russian Railways is developing infrastructure in Siberia and the Far East to match growing trade volumes to and from China. Direct rail freight volumes with China are expected to increase by as much as 100 percent in the next decade. Russian oil, timber, chemical, and mineral fertilizer exports comprise the majority of cargo. But in 2010, with greater volumes of Chinese machine and technical goods, imports started to gradually increase.

Sensing an opportunity, Russian Railways allocated more than 12 billion rubles (about $390 million) to develop rail infrastructure in its Far East region during 2010; in 2011, that figure is expected to climb.

It may sound like an early 20th-century tale, but Russia hopes that developing terminal infrastructure and distribution facilities along a Eurasian rail line to China could finally connect and develop the country's hinterland. Such a revolution would mean more freight volume, more border crossings between Russia and China, and more interest from other countries, especially in Europe.

Russian Railways has already reached agreements with Chinese and German partners to create a joint venture for container transport across Eurasia.

German rail carrier Deutsche Bahn (DB) and the Chinese Ministry of Railways have begun an initiative to cooperate closely on rail freight transport, and to enhance Chinese infrastructure. China presents growth potential for DB and its customers; and as the country's production sites chase cheap labor farther inland, rail becomes more attractive to many European manufacturers.

Germany's transportation and logistics acumen and market demand, combined with China's infrastructure needs and abundance of cheap manufacturing capacity, offer complementary value propositions. In between, Russia has everything to gain.

Wen and Vlad… China and Russia… energy supply and consumption demand… Sometimes the oddest couples make perfect sense.

By partnering with the Chinese Ministry of Railways to enhance rail freight transport, German rail carrier Deutsche Bahn hopes to tap into China's growth potential.

Panama and Georgia Tech Become Classmates

As anticipation builds for the Panama Canal's 2014 expansion, the country is getting a logistics education. Georgia Tech recently opened the Panama Logistics Innovation & Research Center in Panama City, the latest addition to the university's global network of innovation clusters focused on improving country-level logistics performance and increasing trade competitiveness.

Under an agreement between Panama's National Secretariat of Science, Technology, and Innovation, and Georgia Tech's Supply Chain & Logistics Institute, the research cluster aims to grow applied research, education, and competitiveness within the country. The school's primary objectives are to improve Panama's logistics performance and to establish the country as the trade hub of the Americas.

The center will develop formal degree and executive education programs to increase human capital in logistics through creating repositories and models to support trade analytics; developing performance, integration, and visibility systems; facilitating stronger industry and infrastructure linkages to improve Panama's competitiveness; providing leadership for the development of a national logistics plan and national logistics council; and establishing a foundation for new logistics services and jobs.

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U.S. and Brazil Open Skies

The United States and Brazil have agreed to gradually execute an Open Skies aviation regime, significantly liberalizing services for airlines serving both countries. Air transport buyers will benefit from more competitive pricing and convenient services.

The agreement immediately removes restrictions on pricing and the routes that U.S. and Brazilian scheduled and charter airlines currently serve. It also provides for full code-share rights and additional charter flexibility.

Between October 2011 and October 2014, U.S. carriers will be allowed to progressively increase scheduled combination, all-cargo, and charter flights, including additional services to the currently restricted and highly congested São Paulo and Rio de Janeiro airports.

When the Open Skies agreement takes full effect in October 2015, airlines from the United States and Brazil will be allowed to select routes, destinations, and prices for cargo, passenger, and charter services based on consumer demand and market conditions.

UK Copes with Early Winter

A prolonged arctic blast in the United Kingdom and Ireland in fall 2010 put the freeze on transportation and logistics activities–throwing shippers and carriers into a crash course on contingency planning.

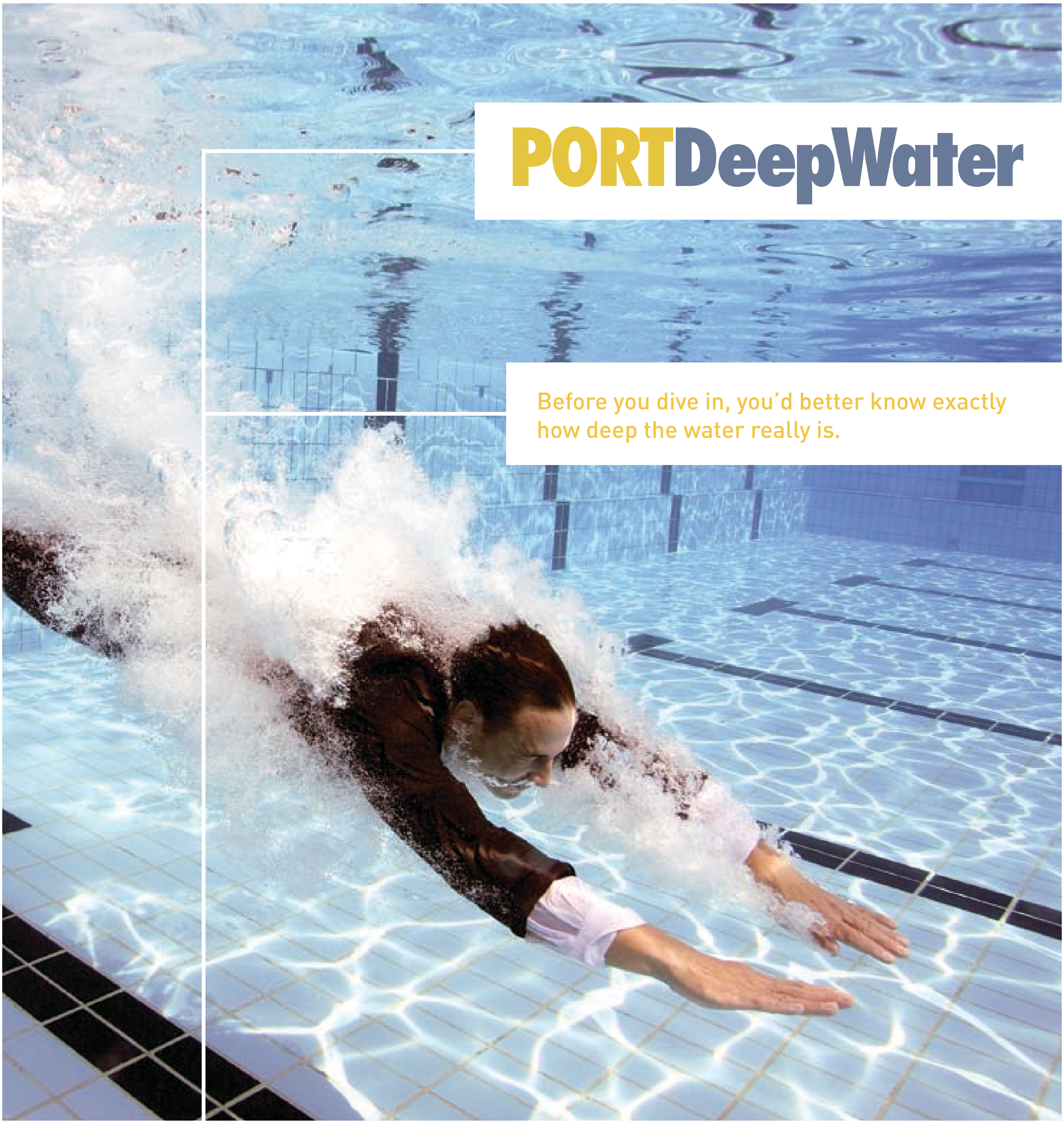
Unseasonable heavy snow and icy roads caused chaos for delivery companies while leaving petrol stations short on fuel. The UK motorway system was severely crippled with broken down and abandoned vehicles unable to move along the nation's snow and ice-laden roads, leading to widespread closures. Area airports and ports experienced similar

TNT Splits to Expand

Dutch postal and express group TNT has officially split its express and mail divisions, a move aimed at strengthening the existing express business while enabling the company to expand into adjacent market segments.

TNT, Europe's number-two expedited delivery company behind DHL, will retain a stake of 29.9 percent in the express unit to cover separation requirements. The divestiture, which was originally announced in August 2010, has brought its share of speculation that UPS or FedEx would make a move to acquire.

The express division will segment reporting into the following regions: Europe and Middle East/Africa; Asian Pacific; and the Americas. Regarding the mail piece, the company plans to expand activities in areas with core competencies such as high-value freight and parcel shipments that demand value-added services. In emerging markets, the express division will continue to develop day-certain services and grow its intercontinental business.


PORTDeepWater
Before you dive in, you'd better know exactly how deep the water really is.

Metro Delivers Fish with Chips

Metro Group's German Cash & Carry operation has concentrated fresh fish logistics at a new distribution center near Frankfurt Airport. The supermarket chain is delivering the catch of the day—275 tons of fresh fish and seafood every week—to wholesale stores in Germany and Austria. Efficiency and sustainability are the main reasons for implementing the new logistics approach.

Metro Cash & Carry is the largest fresh fish distributor in Europe, supplying 70 different species of fish and 300 fresh fish products to wholesalers and consumer plates alike. One principal benefit of bundling logistics in one location is that time- and cost-intensive shipment steps are removed from the process. This means nearly all fish products reach stores within 48 hours after being caught, thus ensuring improved freshness for customers.

From the warehouse to the store, fish shipments are moved via trucks equipped with automatic temperature-monitoring devices. Sensors constantly check product vital signs, which are transmitted to a central database via satellite, then evaluated. If temperatures exceed specified limits, Metro Group can react immediately and reroute shipments to refrigerated facilities.

By operating a state-of-the-art fish logistics DC near Frankfurt Airport, Metro can deliver fresh fish to its wholesale stores in Germany and Austria within 48 hours after it is caught.

disruptions, either closing or operating at reduced capacity for long periods.

On the plus side, it was business as usual for some UK ports. Despite treacherous weather conditions, the Port of Teesport remained open for business–which was even more remarkable given the fact that it is located on England's northeast coast, one of the areas hardest hit by severe snow accumulations.

Teesport implemented a daily, 24-hour snow clearing and gritting operation, enabling it to safely service a significant percentage of shippers.

Asia Tries Local Sourcing

As inflation creeps into China's economy and domestic food prices rise, authorities are making efforts to shorten the agricultural supply chain. The government plans to boost direct supplies of food products from farmers to supermarkets, increasing the share of local sourcing from current 10-percent levels to more than 30 percent by 2015.

As part of this broad strategy, a pilot project is currently operating between a Walmart store and 10,000 farmers in a Beijing suburb. The move not only increases income for farmers, it also improves quality control and food safety supervision, says China's Ministry of Commerce.

Local sourcing is gaining traction elsewhere in Asia. Nestlé SA, for instance, plans to invest nearly $100 million in Indonesia to produce Milo chocolate-flavored products and Cerelax weaning formula.

The company estimates that its West Java factory will employ about 300 people and be operational by the end of 2012. Nestlé intends to purchase 10,000 tons of cocoa powder per year directly from local farmers, a move that will increase supply chain efficiency as shipping costs drop.

In terms of strategy, Nestlé will focus on selling to a segment of the Indonesian population whose

purchasing power is swiftly growing. By expanding operations on the island, the company hopes to ensure that its supply chain is diversified and can respond quickly to supply and demand changes.

Lufthansa Brings Chill to India

Lufthansa Cargo and GMR Group, the operator of Rajiv Gandhi International Airport in Hyderabad, India, plan to jointly develop the facility as a cargo hub for transporting temperature-sensitive pharmaceuticals in South Asia.

Future efforts entail building out the airport's infrastructure capabilities to support the complex requirements of providing reliable, temperature-controlled transport solutions.

For its part, Lufthansa Cargo will provide necessary capacity by stationing its own fleet of cooling containers in Hyderabad. In August 2010, the airline debuted its Opticooler cold chain container system, which will play a key part in the joint venture looking to capture business in one of the world's largest generic pharmaceuticals markets.

Aeromexico Seeks Less Law, More Safety

Mexican laws capping foreign ownership in the airline industry restrict the ability of carriers to team up with Latin American counterparts, explained Andres Conesa, Aeromexico's chief executive, at the ALTA Airline Leaders Forum in Panama City, Panama. Currently, Mexico requires majority national ownership for airlines.

Criticism from the head of Mexico's largest carrier comes after a wave of mergers and acquisitions in the Latin American airline industry in 2010, with Colombia's Avianca joining up with El Salvador's TACA, and Chile's LAN Airlines planning to merge with Brazilian carrier TAM.

Conesa's call for easing limits on foreign investment in Mexico's air space was overshadowed by the U.S. Federal Aviation Administration's (FAA) decision to downgrade the country to safety Category 2 in 2010. The FAA's decision was prompted by concerns about lax government oversight of the country's airlines, and restricts Mexican carriers from expanding their service to the United States and from code-sharing with U.S. airlines. [ ]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3PLLINE

by Mark Laufer

Balancing Shipper and Carrier Interests

The past two years have been a roller coaster ride for both carriers and shippers. After the financial crisis, carriers dropped their rates to unprecedented levels. Service contracts locked in these non-compensatory rates, and volumes dropped precipitously. Ocean carriers took ships out of service, and capacity cuts were steep and drastic. The financial viability of many carriers was called into question.

Fast-forward 18 months, and the scene is much different. Carrier profitability bounced back to near-record levels. Rates recovered, and, to the dismay of shippers, carriers increased rates and levied surcharges. Shippers still can't get freight on ships, creating major disruptions to supply chains worldwide.

Shippers and carriers have wasted no time blaming each other. Who is at fault? And what can supply chain managers learn from this state of affairs?

THE PARTNERSHIP MYTH

The answer is simpler–and harder for carriers and shippers to accept–than it appears. Simply put, the idea of partnership in the shipper/carrier world is a myth. The new world of supply chain management requires that carriers and shippers both understand and respect the economics of the industry.

Capacity, the product supplied by transportation carriers, operates as a commodity market. When supply is high and demand is low, rates drop without regard to the return on investment required for the asset's long-term health. Carriers should recognize that peaks and valleys in demand will even out over time, and shoot for price stability. But historically, that hasn't happened. As soon as capacity exceeds supply, carriers lower their prices.

Similarly, shipper behavior is essentially predictable. A company faced with hard economic times will squeeze every possible penny from transportation costs–without consideration for the carriers' need for an adequate return on investment.

Carriers have to control capacity, pricing, and their costs to guarantee that the swings between rates in good times and bad do not put them in serious financial trouble. They will learn this discipline only when they stop fooling themselves about their supposed partnerships with customers, and recognize the relationship for what it is: self-interested economics on the part of supplier and customer.

Shippers must ensure they have a reliable source of "supply." They need to know the relationships they have are strong enough to guarantee the supplier will stand by them in bad times and provide capacity in a strong market. That means paying a compensatory rate–not necessarily the lowest.

LESSONS LEARNED

Carriers traditionally forget their bitter lessons the moment the market turns strong. They go on buying binges, increase capacity without regard to realistic growth prospects, then collapse their pricing when they can't meet expectations.

Shippers would happily squeeze carriers to the lowest possible rate level, place too much reliance on one carrier (usually the one with the lowest rate), and feed secondary vendors only when their primary vendor fails. This combination predictably yields the lowest cost for transportation on paper, but the worst performance for the shipper.

Both sides have to understand they can't always get what they want. But perhaps by working together, both parties can get what they need. ■

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ITMATTERS

by Rick Register

Top Five Ways Warehouse Management Systems Deliver ROI

As the economy recovers, many companies are considering upgrades to their existing warehouse management systems (WMS) or deciding to invest in a WMS for the first time. All executives making these decisions want to know when they can expect to see a return on investment (ROI) for their technology selection.

Here are five areas where executives can find additional ROI opportunities.

1. Managing inventory. Distributors who lack inventory and warehouse accuracy often carry more safety stock than necessary. Using a WMS allows them to gain inventory and warehouse accuracy so they can reduce safety stock levels. It also provides visibility to real-time inventory, which can potentially eliminate lost product and reduce overstocks.

Warehouses with high levels of inventory accuracy cut costs by not purchasing product until it is needed; earning price breaks by ordering in larger quantities; and consolidating orders to vendors, which limits inbound shipments.

2. Saving space. Using a WMS allows distributors to define storage areas and bin locations in the warehouse. The system then manages product storage using the rules established for the facility. A better organized warehouse yields space savings.

3. Getting the most from labor. A big part of any ROI, labor savings come in numerous forms. Using a WMS can deliver benefits including gaining productivity, reducing and potentially eliminating costly physical inventories, and absorbing business growth and increased volume in the warehouse with existing resources. It also makes training new employees easier.

4. Satisfying customers. Customer satisfaction is often hard to measure, but it is valuable. Having the right product to deliver to customers at the right time and to the right place helps increase sales by reducing short ships, shipping errors, and missed deliveries.

Service-level agreements (SLAs) with customers often have strict guidelines and penalties in place if the distributor fails to satisfy ship completes, on-time delivery, shipping accuracy, labeling, and packaging requirements. A WMS provides the tools to help properly manage SLAs and avoid stiff penalties.

5. Reducing wear and tear. Pallet jacks, forklift trucks, man-up trucks, and other materials handling equipment experience tremendous wear and tear. Using a WMS provides benefits such as:

- Efficient routing of activity throughout the warehouse.
- Consolidated activity, such as wave order picking and zero bin cycle counts.
- Associating equipment to areas of the warehouse and to appropriate work.
- Managing and enabling pickup and delivery, also known as drop points.
- Reducing time spent locating product as a result of accurate inventory.

A MATTER OF TIME

The timing for achieving ROI on a WMS investment should be relatively short. While not the same for every company, some can recognize ROI in just three to six months. For others, the payback will be longer. But in most cases, operations that do not currently have a WMS can likely recognize ROI in 12 to 18 months. ■

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VIEWPOINT

by Joe White

How the Driver Shortage Impacts Capacity

It is likely that a driver shortage is coming, due to pressures such as an aging driver workforce, the Department of Transportation's (DOT) Compliance Safety Accountability program, and the anticipated DOT-mandated reduction in driving hours. Yet many supply chain professionals have yet to grasp how a driver shortage impacts capacity.

Simply put, a driver shortage creates high driver turnover rates, which have a more negative impact on trucking capacity than the shortage itself.

TURNOVER'S IMPACT ON CAPACITY

Here is a scenario that illustrates the impact of driver turnover on capacity: At 100-percent turnover, XYZ Trucking, with a fleet of 150 drivers, has to hire 150 drivers each year. It takes time to recruit, interview, hire, and train new drivers. Once they start working, it takes even more time for drivers to become productive because of the learning curve associated with new routes, customer requirements, and company policy.

This new-employee penalty results in approximately 90 lost work days for each driver replaced. Replacing 150 drivers therefore results in XYZ Trucking losing a total of 13,500 work days each year.

A full-time productive driver works 255 days a year. Divide 13,500 total lost work days by 255, and XYZ Trucking loses 53 drivers worth of production each year. Subtract 53 from its 150-driver fleet, and its effective driver count falls to 97 drivers.

In summary, at 100-percent turnover, XYZ Trucking's 150-driver fleet is only doing the work of 97 full-time drivers.

During a tight labor market, drivers can quit one trucking company and start at another the following week. Safe drivers, knowing they can get a job anywhere at any time, will quit an employer for the smallest of frustrations or hire on at a new employer if compensation or working conditions are perceived to be even slightly better. If they are dissatisfied with their new employer, their original employer will welcome them back, often without disruption of seniority or benefits.

WHAT'S IN STORE

The last driver shortage spanned from 2005 to 2007. In 2005, the trucking industry was 20,000 drivers short, according to Global Insight, a market intelligence firm. Current forecasts for the next shortage range from 200,000 to 400,000 drivers.

When we were 20,000 drivers short, turnover peaked at 136 percent for large truckload carriers. How high will turnover soar when we are more than 200,000 drivers short? And how low will effective driver counts drop?

SEARCHING FOR THE SOLUTION

We can't change the influences that will force a driver shortage. The shortage will come. Collectively however, as truckers and shippers, we can reduce its impact.

Trucking companies need to focus on driver retention. While that may seem a simplistic conclusion, too many carriers still focus resources on recruiting. The best source of driver labor for any trucking company is its own fleet. In the XYZ Trucking example, dropping from 100-percent to 75-percent turnover would increase effective driver counts by 13. If drivers averaged 100,000 miles per year, XYZ Trucking would gain 1.3 million miles of annual capacity.

Driver retention programs are complex

(continues on page 66)


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CONTINUED FROM PAGE 64

to implement and manage, yet their solution is based on the simplest premise: building employee loyalty. But building loyalty takes time.

Unfortunately, too many truckers get serious about retention only when the crisis arrives and will be starting at the beginning of the loyalty curve.

MAKING DRIVERS WANT TO STAY

Developing an effective driver retention program includes providing competitive compensation and benefits, adequate home time, reliable equipment, consistent communication, productive working conditions, and respectful treatment.

Shippers need to understand what they can do to help. Perhaps the biggest opportunity is expanding pickup and delivery windows. Just-in-time or shipper-convenient deliveries have been capacity killers for trucking companies.

For example, an 8 a.m. to 11 a.m. delivery widow could force Driver A to drive through a large metropolitan city during congested rush hours. Another shipper with the same window for pickup 100 miles away would force a trucking company to send a second driver to cover the load even though Driver A may be the closest, and therefore most productive, choice.

If both windows were expanded to six hours each, say 7 a.m. to 1 p.m., Driver A could handle both assignments–and in a more productive and capacity-effective manner.

A LOOK AT THE OPTIONS

The past several years have made heroes out of logistics professionals and third-party logistics providers as the recession provided a hammer to significantly beat down transportation costs. That will change as limited capacity, higher rates, and driver-friendly attitudes force truckers to take a serious look at shipper and lane alternatives.

The message from trucking companies will come through loud and clear. Delivery windows too restrictive? I don't want that freight. My drivers have to wait or help unload? I don't want that freight. No backhaul potential with that lane? I don't want that freight.

Tomorrow's logistics heroes will be supply chain professionals who successfully shift their focus from transportation spend to transportation assurance. They are going to work hard to make their companies the shippers of choice for truckers with limited driver resources. ■

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CARRIERS CORNER

by Jerry Levy

White Glove Services: Ask for What You Need

White glove service is one of the supply chain's most complex specialty areas, encompassing everything from first- and final-mile value-added services, to delicate or high-value product handling. Because of white glove services' specialized nature, shippers must define their specific requirements for these projects in their RFPs, and service providers need to thoroughly evaluate the scope of work to prepare accurate pricing.

Problems can arise when general freight companies attempt to provide first- or final-mile solutions together with commodity line haul using different suppliers. For example, the logistics director of an electronics manufacturer recently complained that his company was being "accessorialed to death" by its freight forwarder. The manufacturer's RFP had not clearly stated its customers' requirements, and the forwarder supplied a solution that did not address some specific needs. Hence, the agreed-upon pricing covered some, but not all, of the actual services required.

More importantly, the non-asset-based forwarder did not have the necessary equipment and control needed for the project. It outsourced some services and did not have the expertise to cover all service requirements. This arrangement resulted in angry customers, higher-than-expected logistics costs, and product loss and damage.

STATE YOUR EXPECTATIONS

The following guidelines can help ensure your RFP gives potential service providers an accurate summary of your white glove service needs:

1. Use metrics whenever possible. Vague information leaves room for interpretation–and miscalculation. Instead of descriptions such as "some consignments will need pad wrapping," cite specific numbers to help service providers develop accurate pricing and assess a match with capabilities.

2. Identify all handling characteristics. Include details about shipments' susceptibility to damage, weight ranges, and packaging characteristics. This information enables the provider to assess your equipment and labor needs.

3. Give examples of the toughest customer deliveries. If you require deliveries within one-hour windows to meet installation technicians, for example, be sure to mention this fact on the RFP.

4. Outline liability. Explain the shipments' replacement and retail costs, and identify the liability requirements you expect of the carrier.

CONSIDER THE BIG PICTURE

A common mistake shippers make when buying supply chain services is considering only the transactional delivery price. They end up paying more in freight damages, lost customers, and returned shipments.

One producer of delicate computer equipment chose a third-party logistics provider that used a standard less-than-truckload carrier and agents at each end for packing and unpacking. The company saved $500,000 over using a true white-glove provider–and ended up paying the same amount in freight damages, not to mention future lost orders.

Whether your white-glove service needs focus on business-to-business, home delivery or pickup, inside delivery, or installation services, consider the importance of execution and know your needs–and those of your customers. Then evaluate suppliers on their ability to give the best value, not necessarily the lowest transactional transportation price. This approach will put you on the road to a successful logistics program. ■


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ECODEV

ISSUES AFFECTING | ECONOMIC DEVELOPMENT

by David Holt

Growing a Statewide Logistics Sector

Recognizing that advanced manufacturing and the logistics sector represent a key economic development opportunity for Indiana, local leaders formed Conexus Indiana, a statewide forum for key logistics and manufacturing employers, academia, and government. Its goals are to attract and grow logistics and advanced manufacturing companies, add value to the goods that move through the state, and create high-paying jobs by building the human capital needed to support the growing demand for logistics services.

Like the rest of the country, Indiana faces a shortage of workers with the skills necessary for logistics and advanced manufacturing careers. One key to building a workforce is bringing together educators and manufacturers to develop a skills template and curriculum that fills the gap between classroom and workplace.

Indiana also has taken a hard look at how to strengthen its image as the "Crossroads of America" and ensure its infrastructure and public policies foster continued growth. Conexus Indiana has addressed these issues and completed a statewide plan for future success.

The process Conexus Indiana took to develop this plan was unconventional. It included creating a dedicated leadership team of 36 executives from major logistics operations throughout the state, as well as community leaders and service providers. This team, the Logistics Council Executive Committee, represents all facets of the supply chain.

PLOTTING A ROADMAP

Building consensus among a group from competing industries and spanning a statewide geography wasn't easy. To lay the foundation for its strategic plan, Conexus Indiana traveled the state, listening to local leaders and economic development groups who identified opportunities for logistics growth in their region. Those findings were shared with the 36 council members who collaborated on strategies to address each opportunity–whether it be infrastructure improvements, curriculum development, or public policy.

The result is a statewide roadmap for future progress. The plan aligns public and private partners, and will allow existing companies to grow their businesses, develop a more attractive environment to locate in Indiana, and create high-paying jobs for Hoosiers.

Conexus Indiana allowed industry partners to come to consensus on areas of statewide importance, such as intermodal capacity and projects to expedite freight movement. Forming a unified voice among the logistics enterprises of an entire state gives weight to its efforts and helps advance the industry's agenda at the state and federal levels.

Significant buy-in from the private sector also ensures that the plan won't gather dust, but will take the next step toward legislation, capacity-building projects, and a more prepared workforce.

In the coming year, Conexus Indiana plans to release a second phase of the plan that will include recommendations for funding the projects outlined in the first phase, an improved financing mechanism for infrastructure projects statewide, the public policy package, and other long-term goals.

Building a statewide coalition dedicated to helping logistics and advanced manufacturing businesses succeed gives the sector a louder voice in advancing its agenda at the state and federal levels, and opens the door for future partnerships and new efficiencies. Ultimately, the process will allow logistics operations to grow in Indiana, and will attract new businesses and high-paying jobs. ■

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GREEN LANDSCAPE

SUSTAINABILITY IN THE SUPPLY CHAIN

by John Pattullo

Making Sustainability a Reality

The logistics and transport market sector contributes 5.5 percent of total global greenhouse gas emissions, according to 2009 research produced by the World Economic Forum. The sector's lack of understanding about the current emissions baseline is the biggest obstacle to establishing a meaningful green supply chain strategy.

Even with a starting point of such magnitude, more than 80 percent of global companies have made their transport/logistics operations greener. In addition, 66 percent have adopted a green sourcing approach, and 59 percent have implemented reverse logistics operations. But even these efforts are unlikely to be enough considering the latest predictions about our planet's welfare.

In recent years, environmentally focused legislation has targeted individuals and business. We currently have no global agreement on targets or a preferred route forward for our sector. Many logistics and transportation professionals hoped that the Copenhagen Climate Summit in December 2009 would provide the global foundation for targets, but this was not the case.

In some regions of the world, such as the European Union, policy has moved forward since Copenhagen. But in other areas, such as the United States and Australia, policy seems to have stalled, which means we cannot rely on governments to provide the answers.

STEPS IN THE RIGHT DIRECTION

We should not, however, give up. Several global initiatives outside of government regulation are making progress: The International Environmental Governance Reform, a United Nations program undertaking a consultative process on the reform of international environmental governance; Greenhouse Gas Protocol, a leading CO_2 standards agency and the most widely used international accounting tool for government and business leaders to understand, quantify, and manage greenhouse gas emissions; and the Carbon Disclosure Project, an independent, not-for-profit CO_2 measurement agency holding the world's largest database of primary corporate climate change information.

These efforts, however, will not be enough to decarbonize the logistics and transportation sector. We must all examine our own impacts, then identify ways to collaborate with competitors, peers, and customers to drive change forward while using these emerging global standards as a baseline.

In a more complex and confused environment, the responsibility will fall to business to decide on an appropriate approach. This is where cross-industry collaboration becomes vital. To be successful, this collaboration must be coupled with education on the challenges, and a corporate commitment that delivers business benefit as well as appropriate investment.

The good news is that the transport and logistics sector is talking about sustainability and environmental impact, and many companies are making headway. For example, the Alliance for European Logistics brings together companies such as BASF, Air France/KLM, Kuehne + Nagel, DHL, Motorola, and eBay to help policy makers develop consistent regulation that ultimately impacts the supply chain industry.

This is just one example. We need to take collective and collaborative responsibility to ensure that supply chain decarbonization becomes reality. This means keeping an open mind and working with customers and competitors to leverage best practices and replicate learnings to the benefit of all. ■

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by C. Daniel Negron

Do You Know Who You're Doing Business With?

Q: My company's cargo volumes are increasing now that the economic slowdown is beginning to turn. We are receiving orders from new customers we developed through international marketing efforts. What should we look for when screening new clients?

A: As you enter into new business relationships, it is important that you know your customer. Five Brazilian companies recently failed to heed this admonition and learned their lesson the hard way.

These companies were in the business of purchasing used recyclable plastic for reprocessing into new items. They arranged separately to purchase recyclable waste products from two British companies that were actually operated by Brazilian nationals living in England. Under the agreements, the purchasers were to receive durable plastics left over from items such as consumer goods, food containers, and medical waste, for reprocessing into resin for use in new products.

Over a four-month period, 89 shipping containers carrying more than 1,400 tons of waste products were transported to three separate ports in southern Brazil. The goods were labeled as harmless plastic, but for reasons unknown, they remained at the ports for up to four months.

A routine inspection revealed that the containers had been filled with medical waste including bags of blood, used syringes, soiled diapers, and old medicine. The units also mixed chemical toilets and used bandages with bales of recyclable plastic. In addition, inspectors found hazardous waste including old computers, TVs, and car batteries.

The discovery caused widespread anger in Brazil, and prompted Ibama, the Brazilian environmental agency, and the British Environmental Agency to launch investigations in their respective countries. Despite assertions that they had been misled into believing they were purchasing recyclable plastic, the importers were fined between $90,000 and $225,000 by the Brazilian government.

The conduct of business across international boundaries presents a set of challenges, not the least of which involves gathering relevant background information regarding trading partners. International security concerns and governmental compliance obligations dictate that companies make reasonable efforts to know who they are trading with, the nature of the goods being traded, and the regulatory framework governing the transaction. This is especially so when the business involves transporting waste internationally.

In this case, a background search might have revealed that the two British companies were registered to two individuals at the same home address in Britain. Many reputable businesses operate out of homes, but given that this transaction involved recyclable waste, a further inquiry into the background and experience of the principals might have been warranted.

If a company's name is not readily identifiable, ask for copies of any licenses that the organization may hold, and request references from existing clients and trade associations. The more active and visible a company is, the more likely it is to be a reputable organization.

It is unfortunate when the acts of a business partner result in a costly commercial transaction. It is even worse when those actions result in a penalty against an innocent party. By making an effort to know your customer, you can avoid these types of incidents. ■

FACING LOGISTICS CHALLENGES? USE IL'S 3PL EXPERTS AND

SUPPLY CHAIN GAIN

Benchmarking Success

by Merrill Douglas and Joseph O'Reilly

Businesses today are challenged with aligning myriad logistics parts, internally and externally, into a cohesive supply chain whole. The objective is to create a continuous flow from demand to supply, where functional silos work seamlessly within a broad and global network. In between, businesses look to optimize processes, squeeze out costs, and create efficiencies. They set goals, execute, benchmark progress, raise the bar, and begin anew–all along the supply chain.

This article spotlights examples of these supply chain gains–specifically how shippers are working together with service providers to identify problems, find solutions, and create measurable improvements within their organizations.

We present seven different logistics silos: globalization, site selection, outsourcing, logistics technology, sustainability, trucking, and materials handling. Inside each, we offer topical overviews of where industry is trending. Case studies provide anecdotal evidence of how shippers and service providers are partnering to achieve mutual gains.

Collectively, these snapshots represent how logistics functions, supply chains, and industries are working together to create a more integrated, informed, innovative, and universal "supply chain."

IN THIS SECTION

GLOBAL GROWTH

Contingency suppliers, sourcing differentiation, special incentives, and a host of other strategies generate improvements in supply chains that reach around the world.

Unreliable delivery. Long lead times. Poor quality. Those are the global sourcing problems cited by more than 60 percent of chief supply chain officers around the world responding to a recent IBM survey.

Globalization has altered the rules of trade for nearly all companies. "Not many companies aren't touched globally in some way," says Karen Butner, global supply chain management leader at the IBM Institute for Business Value and architect of the *Global Chief Supply Chain Officer* study.

Although survey respondents say globalization's benefits outweigh its problems, businesses naturally are looking for ways to increase efficiency and quality, drive down costs, and otherwise improve their global supply chains.

In one recent trend, Butner says, companies are responding to variable customer demand by continually optimizing their networks.

In the past, companies conducted large projects to optimize for the long term. "They'd make changes, save money, wait five years, then do it again," Butner says. Today, the best-performing supply chain organizations fine-tune their networks and rebalance inventories almost without ceasing, on both the inbound and outbound sides.

One strategy for continuous network improvement is forging relationships with multiple suppliers in different locations. Supplier A might be the main source of key products or components today. But the company also maintains an agreement with Supplier B, perhaps in another part of the world where it can deliver more effectively to certain markets. "A company can ramp up Supplier B if that emerging market takes

off," Butner explains.

Making contingency arrangements with suppliers in different countries also provides a hedge against marketplace risks, says Jonathan Byrnes, a senior lecturer at the Massachusetts Institute of Technology and president of consulting firm Jonathan Byrnes & Company.

"Currency fluctuates tremendously," says Byrnes, pointing out that currency value is a component of cost. "Tax rates change overnight. Shipping capacity is available or it's not. Companies have to pour enormous time and sophistication into balancing these factors in their international supply chains."

Some companies maintain that balance by sourcing the same goods from suppliers in several countries. With spare capacity in place, a company can quickly switch from one source to another as conditions require.

Another strategy for keeping the supply chain agile is what Byrnes calls sourcing differentiation. "Companies are sourcing differently depending on a variety of factors, such as the type of product and where it is in the product lifecycle," he says.

For example, global fashion retailer Zara, based in Spain, sources products from Eastern Europe while demand for them is steady and predictable. It's inexpensive to produce in that region, but manufacturers there are inflexible, Byrnes says. When Zara gets a sudden wave of demand for certain products, it turns to a second set of suppliers.

"It sources the 'wave' in Spain or other countries where manufacturing is much more expensive but very flexible," he notes.

A third strategy for responding to variable conditions is dispersed manufacturing.

One big challenge is finding qualified leadership talent in new global markets, especially in the Asia Pacific region.

Around the world, but especially in Asia, companies are working with sophisticated supply chain specialists that contract for raw materials and manufacturing capacity. Byrnes cites the example of Li & Fung, an export trading and sourcing company based in Hong Kong.

"Li & Fung maintains relationships with top manufacturers throughout Asia and around the world," Byrnes says. Retailers contract with them to match their needs with available capacity.

Knowing which factories are expert in which kinds of manufacturing, Li & Fung might use several vendors in different locations to fill an order. Say a U.S. customer wants to produce a toy dog. "The plastic pieces may come from the Philippines, and the fabric from Vietnam," Byrnes says. "The toy may be assembled in yet another country."

Dispersed manufacturing offers the brand owner many advantages. "It gives them certain supply, enormous flexibility, and low prices, because they're doing everything the right way in the right place," Byrnes says.

For companies that establish their own operations around the globe–whether for sourcing or selling to overseas markets–one big challenge is finding executives and managers who know the local business environment, but also understand the corporation's inner workings.

"Supply chain executives' most urgent need is leadership talent," finds IBM's *Chief Supply Chain Officer* study. "This talent vacuum is most acutely felt in the Asia Pacific region, with nearly nine out of 10 executives citing it as a top challenge."

To gain better leadership talent in new markets, some companies create special incentive packages for managers from developed markets who agree to spend a few years getting new markets off the ground. Then those managers train others to take over locally.

SQUEEZING LEAD TIME

For companies trying to receive their overseas orders faster, technology that supports online collaboration can help compress lead time, says Nathan Pieri, senior vice president, marketing and product management at Management Dynamics, a Rutherford, N.J., firm that provides hosted global supply chain management solutions.

Often, lead times are extended because it's hard for trading partners 13 time zones apart to manage a project together. If a partner in Asia sends an e-mail about a problem, the U.S. partner might not get the message until the next morning.

Management Dynamics offers a supplier portal that integrates with its compliance and logistics applications. Because it establishes standard operating procedures and creates formal

(continues on page 84)

CASE STUDY

EPT Phones Home

SHIPPER: Environmental Packaging Technologies

GOAL: Improve finished product quality and speed to market.

OUTCOME: Moving manufacturing from China to the United States helped reduce costs by 18 percent and virtually eliminated quality issues.

With offices, agents, and customers throughout the world, Environmental Packaging Technologies (EPT) is indisputably a global enterprise. So it's especially striking to see the improvements this Houston-based company has made by converting from offshore to domestic manufacturing.

EPT produces and distributes several kinds of packaging for moving large volumes of bulk product. Its BIG Red Flexitank is a single-use polyethylene liner used to transport liquid in a 20-foot container.

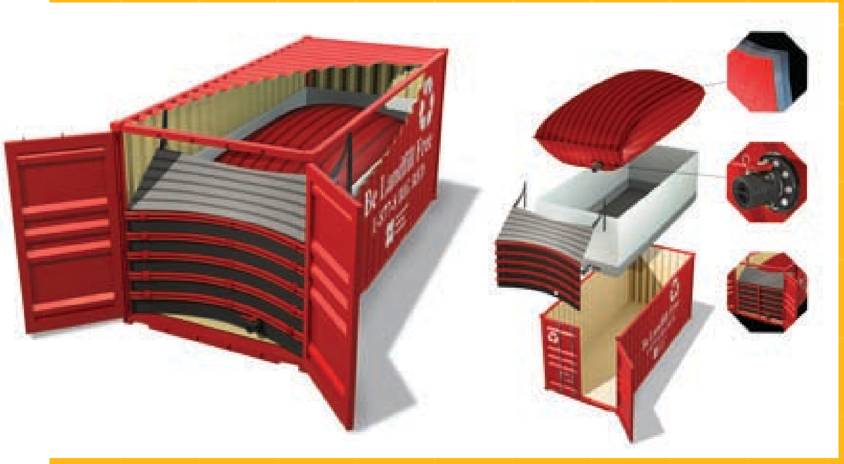
EPT used to manufacture the BIG Red Flexitank in China, shipping U.S.-made materials there for assembly, then bringing the finished product back to the United States. By 2008, that strategy was starting to wear thin. "We started having quality issues in China, and the time zone difference made it difficult to control," says Nancy Wendrock, president of EPT.

Quality is a critical issue for this product because even a small leak of a non-hazardous liquid could leave EPT liable for thousands of dollars worth of cleanup. "We decided to take control and manage our own future," Wendrock says.

Once company officials made this decision, they started crunching numbers. "We determined that we could produce in the United States at or below the cost we were paying in China," Wendrock says. Labor is more expensive here, but EPT could create a highly automated U.S. factory that would require only eight employees, compared with the 40 at the China factory. The company also would save on transportation because it would no longer need to ship materials overseas.

The company opted to build its new plant in Zeeland, Mich. At the time, the crisis in the automotive industry made Michigan especially attractive for a high-tech factory. "Many qualified, technical-oriented individuals in that part of the country were either out of work or had smaller workloads, so EPT could tap this talent pool," Wendrock says.

The new operation started producing Flexitanks in 2009. Because EPT was already distributing product from the United States, the only major change the new factory created in the company's distribution involved customers in the Asia Pacific region, who previously were served directly from the China factory. "Most of our customer base is in North and South America, Europe, and South Africa," Wendrock says. For those customers, the move to Michigan has shortened the distribution pipeline.



Moving production of its BIG Red Flexitank from China to Michigan helped EPT box up cost and operational efficiencies.

Moving manufacturing to the United States has helped EPT reduce costs by around 18 percent. "Our quality issues have dropped to near zero," Wendrock says. "That has been the biggest savings, because a single leak can cost us from $10,000 to $80,000."

For a company based in Houston, manufacturing in Michigan also simplifies daily operations. "We can react to changes with a phone call, rather than spending one month addressing them," Wendrock says.

Nearshoring has worked so well that EPT plans to move production of a second product, the Dry Liner, to the United States in 2011.

Along with cost and operational efficiencies, the move to a U.S. plant has brought EPT a significant competitive advantage–the right to display the Made in America logo. "That makes a huge difference all over the world," Wendrock says. Customers equate American production with high quality, and EPT has earned that perception by implementing tougher standards in its new facility. Those improvements have attracted higher revenues and a larger, more demanding pool of customers.

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Technology keeps shipments moving by improving customs clearance and security compliance management.

(continued from page 80)
routines, companies using this platform can solve problems faster, Pieri says. Users are more likely to check the portal outside of normal business hours and respond to problems right away, because the technology offers a formal process for responding.

Also, because the system implements policies that users establish–for example, when it's permissible to send a partial shipment–overseas partners can keep orders moving, rather than waiting for special instructions.

Technology also helps keep shipments moving by improving the way companies manage customs clearance, security compliance, and adherence to other government regulations.

COMPLEX COMPLIANCE DEMANDS

Compliance with international trade regulations poses serious challenges. "Global trade regulations are continuously changing," says Adrian Gonzalez, director, logistics viewpoint at ARC Advisory Group, Boston. Shippers, carriers, and their partners need to stay up to date on requirements for submitting information and creating documents.

While international shipment volumes continue to rise, not every company conducting global trade is prepared to address the complex demands of compliance, says Bob Heaney, senior research analyst, supply chain management at Boston-based Aberdeen Group. "Many companies still manage compliance manually," says Heaney.

Others rely entirely on brokers, 3PLs, and other partners, glossing over the fact that shippers are legally responsible for complying with government regulations.

The market offers some solid technology tools for managing global trade compliance. Management Dynamics' compliance solution, for example, helps by making sure shippers and their partners generate documents correctly.

"Shippers only issue compliant purchase orders to their suppliers," Pieri says. With fewer errors, a shipper endures fewer delays in customs, allowing it to maintain lower inventories.

Shippers also can save 25 to 30 percent on entry fees if they provide data electronically to their customs brokers. "And they can save another 25 or 30 percent if they self-file," Pieri notes, using the electronic data to do customs filing without a broker for goods they routinely bring into the country.

Some shippers gain improvements by taking advantage of value-added services that carriers, especially ocean carriers, have started to provide. Wallenius Wilhelmsen Logistics (WWL), for example, created customizing centers where it adds finishing touches to vehicles after it transports them.

"WWL brings in vehicles from abroad in a base form, then accessorizes them to meet demand," Byrnes says. "That sort of service allows vehicle manufacturers to change business strategies. They consider how flexibly and quickly carriers can respond to demand."

GETTING CLOSER TO CUSTOMERS

Besides postponing the final step of manufacturing until product reaches the market where it's sold, some companies have decided to move the entire manufacturing process closer to the customer. "Many companies are considering locating manufacturing in Mexico, Costa Rica, and South America, and some are coming back to the United States," says Heaney.

Other companies have never gone offshore at all, because they've successfully exploited the advantages of foreign trade zones (FTZs). Heaney cites a Japanese copier maker with U.S. subsidiaries that are located in FTZs. They don't pay tariffs on components they import from overseas, and U.S. law exempts the finished copiers from tariffs, saving significant money.

"The company operates seven U.S. plants and never has to go overseas to stay competitive," he says.

SAMPLING THE MARKET

Nearshoring is not as prevalent as people might think, says Butner. Companies in Western Europe have been looking to Eastern Europe, and U.S. companies have tried manufacturing in Latin America. But sometimes companies that move into new regions run into problems there.

"Companies are sampling," Butner notes. "They try locating in a new area, then determine the infrastructure's not sufficient and it is difficult to do business there. So they try other locations."

Businesses have learned that it can take up to two years to start manufacturing in a new country. "They don't take these moves lightly and they don't flood certain areas," Butner says.

But they are definitely interested in bringing production closer to end customers. "Companies are more carefully evaluating how and why to move than they were five years ago," she adds.

Companies will continue to travel the globe, however, drawing and redrawing their networks to gain ever-greater supply chain advantage.

CASE STUDY

Bigger Global Footprint, Smaller Transportation Staff

SHIPPER: Abercrombie & Fitch (A&F)

PARTNER: Management Dynamics

GOAL: Gain visibility into global shipments.

OUTCOME: With global trade management software, A&F receives notice of inbound shipments about 10 days sooner than it used to, and can monitor transit and performance.

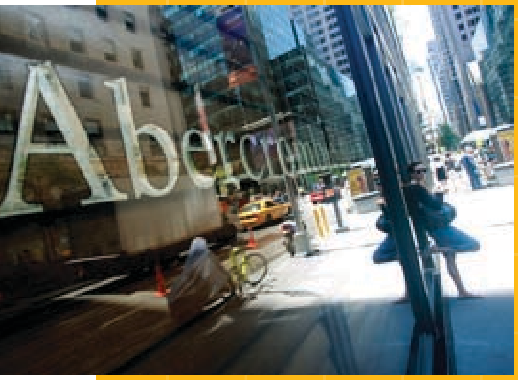
Serving a global market is a complex puzzle. That truth became abundantly clear at Abercrombie & Fitch (A&F) in the late 2000s, as the youth-oriented retailer started expanding into Europe and Asia.

"We had traditionally been a North American-based, single distribution point business, where all our products moved through Columbus, Ohio, to our stores in the United States and Canada," says John Singleton, the company's senior vice president, supply chain. Today, the Columbus supply chain operation orchestrates shipments to Abercrombie & Fitch, Hollister, and Gilly Hicks stores on three continents from three DCs.

It's a high-turnover business that generated about 55,000 purchase orders in 2010. "We ship by air and ocean freight from 13 countries and 35 ports," Singleton says. All the stores under each A&F banner are supposed to display the same merchandise in the same way. So it's crucial to let planners know when new shipments will arrive, and to alert them when one is delayed.

"We try to put a structure in place that allows us to manage exceptions," Singleton says. "To do that, we need a visibility tool."

A&F's homegrown logistics management system wasn't up to the global challenge. "The system required spreadsheets, e-mails, and phone calls," he says. "It was not automated, the information was always wrong, and we had to deal with a 12-hour time difference from our trading partners."



Converting from a manual system to a global trade management software solution facilitated Abercrombie & Fitch's expansion into global markets.

Those difficulties started to vanish in September 2009, when A&F converted to the *Supply Chain Visibility* solution from Management Dynamics, East Rutherford, N.J. Gathering data from A&F's vendors, forwarders, brokers, and other trading partners via electronic data interchange (EDI), the solution displays information that gives A&F up-to-date insight into its orders.

"In the past, the first time we knew we had cargo was when we received an e-mail on a cargo receipt from our freight forwarders or ocean consolidators," Singleton says. That cargo was already in transit.

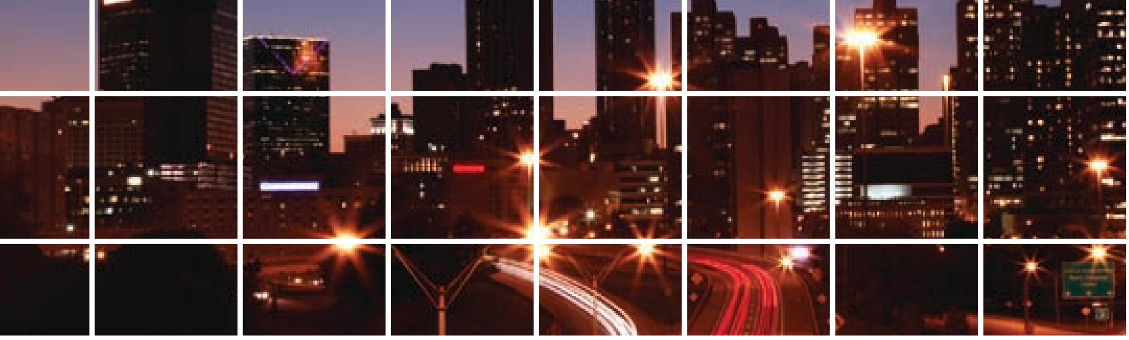
Today, A&F gets notice of inbound shipments about 10 days sooner, when the vendor books transportation. With this added visibility, merchant teams don't need to manage 100 percent of inbound shipments. "They can manage the shipment that didn't happen and try to fix it before it misses the boat," Singleton says.

Supply Chain Visibility is a hosted solution, which proved an advantage as A&F got the system up and running. With a major project to install a new enterprise resource planning system also underway, the company had no information technology staff to spare. Because A&F didn't need to install the visibility software on its own computers, that wasn't a problem, Singleton says. Software upgrades, security, and other ongoing concerns also are the responsibility of Management Dynamics, not A&F.

The visibility A&F has gained through the new solution allows it to manage its expanding international footprint without expanding its staff. "We increased international sales by 87 percent, and grew from one store internationally to 40 stores," Singleton says. "And we have fewer people working in transportation today than we did when we were located only in the United States."

The system also makes it easier to evaluate carrier performance. Forwarders and consolidators used to provide their own performance data, all in different formats, making it difficult to draw comparisons. *Supply Chain Visibility* collects the same data points for all service providers, so it's simple to do an apples-to-apples comparison.

Based on the results, A&F might shift certain trade lanes to different carriers to get better service. Also, the ability to monitor performance at any time keeps carriers on their toes. "They're more accountable now," Singleton says. "They never know which data we'll be able to compare and contrast."



SITE SMARTS

Where you locate a logistics facility can greatly influence how well your supply chain runs.

All locations are not created equal. Pick two areas with well-priced real estate and attractive tax incentives, and one is bound to be the better choice for your supply chain operation.

A company seeking the perfect site for a factory or distribution center needs to consider all its products and markets, and the cost of moving goods through the entire network, from supplier to consumer. "You also have to understand trade and transportation lanes and the associated costs," says Bob Heaney, senior research analyst, supply chain management at Aberdeen Group, Boston. By mapping those inbound and outbound lanes, you identify certain nodes that, based on geography, emerge as the best sites for facilities, he says.

For a global supply chain, geography is only one of many factors to consider. In Europe, for example, sites in several countries might be good candidates based on distances from suppliers and markets. You must also consider duties and tariffs, embargoes, political stability, the availability of talent, and the wages and benefits that prevail in individual countries.

Still, geography remains a powerful factor. The right physical location can vastly improve your ability to receive goods and reach customers efficiently.

Its central location on the populous U.S. East Coast makes North Carolina's Triad region, comprising the Greensboro, Winston-Salem, and High Point areas, a strong lure for some companies.

"The Triad is halfway between New York and Miami, and midway between Washington, D.C., and Atlanta," says Dave Hauser, vice president of logistics at the Piedmont Triad Partnership and executive director of the North Carolina Center for Global Logistics, both in Greensboro.

An abundance of interstate highways makes the Triad's position on the map even more attractive. "Sixty percent of the U.S. population is within one day of our location by truck," Hauser says.

For a facility that conducts much of

its business in the Midwest, however, the Houston metropolitan area might make a better choice. The number of companies that import goods bound for mid-America through the Port of Houston is growing, says Jeff Moseley, president and chief executive officer of the Greater Houston Partnership.

Those numbers will only increase after 2014, when the Panama Canal is due to complete its expansion and start accommodating larger containerships. "Houston will begin serving destinations between the Rocky Mountains and the Ohio Valley," Moseley says.

The Canal expansion represents an example of why companies choosing a site must consider current and evolving needs. As the Canal starts to accommodate containerships with capacities of up to 14,000 TEUs, more vessels from Asia will call on East Coast ports. That could change the siting calculus for many companies.

A site with a strong transportation infrastructure and varied shipping options can help companies gain efficiencies and reduce costs. While many locations are fortunate to have one container port within a 12-hour truck drive, "the Triad has four within a six-hour truck drive," Hauser says.

Houston's infrastructure advantages include 2,200 trains serving the region weekly. Kansas City Southern also provides intermodal service through Houston, connecting the American Midwest and Mexico. "Once cargo comes to the Port of Houston, it's easy to offload and distribute, especially to mid-America," Moseley says.

Another factor companies consider when they choose a site for a supply chain facility is the workforce. A ready pool of workers with logistics experience, plus local opportunities for training and professional development, can make the difference between an adequate operation and a great one.

CASE STUDY

Rooms To Go Goes to Houston

A good network got even better when furniture retailer Rooms To Go opened a one-million-square-foot distribution center (DC) last March in Katy, Texas.

Based in Seffner, Fla., Rooms To Go operates furniture showrooms in nine southern U.S. states and Puerto Rico. Along with Katy, it operates DCs in Lakeland, Fla., Sewanee, Ga., Charlotte, N.C., Arlington, Texas, and Pearl River, La.

When a customer makes a purchase in a Rooms To Go showroom, the company delivers from the nearest DC. "We need a DC anywhere there's a concentration of customers," says Peter Weitzner, a vice president at Rooms To Go.

The company first entered the Houston market nearly three years ago, serving those customers from its Arlington facility. But business has grown so much, company officials decided they needed a DC in the Houston area.

"We were looking for large pieces of land with highway frontage," Weitzner says. "It's important for our customers to see that we have a lot of product, with a large facility placed prominently on the road."

Access to suitable labor was also crucial. That made Katy a perfect candidate: with several large DCs already in the area, it boasted a large pool of experienced logistics workers.

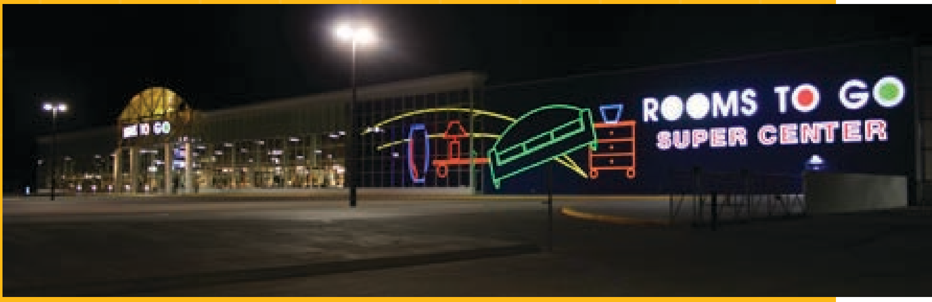
After negotiating on several pieces of land, Rooms To Grow closed on an 118-acre parcel that offers room to expand its facility to 1.5 million square feet in the future. While the company could already offer next-day delivery from Arlington to the Houston metro area, it's easier and less expensive to serve that market from the new DC. "It gives us extra warehousing space and closer proximity to customers," Weitzner says.

SHIPPER: Rooms To Go

LOCATION: Houston, Texas

GOAL: Achieve faster delivery to Houston-area customers.

OUTCOME: A one-million-square-foot distribution center in Houston simplified transportation to local customers.



When Rooms To Go sites new distribution centers, it opts for massive facilities with highway frontage, located near a large concentration of customers.

Any company looking for a site that will confer a logistics advantage must consider the "personnel pipeline," Hauser says. "You need individuals who are trained, or are in training, for logistics, manufacturing, and supply chain opportunities."

To help create that pipeline, the Piedmont Triad's 11 four-year universities, nine community colleges, and seven public school systems are collaborating to create a logistics curriculum for the region. The effort includes the North Carolina Center for Global Logistics, which Guilford Technical Community College is constructing in Greensboro.

The Center will encompass a teaching warehouse, labs, and offices.

Site selection also can become an occasion to develop new logistics strategies. For example, a company might operate one DC on the East Coast and one on the West Coast, each serving its region with a spectrum of products. When opening a third DC, though, the company might consider flowing certain products through only one facility, or using a third party to handle some receiving and distribution.

Site selection is a complex, three-dimensional puzzle built of moving pieces. But line those pieces up right, and you'll discover significant opportunities to strengthen your supply chain.

CASE STUDY

Greensboro Site Cites Improved Service, Lower Costs

SHIPPER: Lenovo

LOCATION: Greensboro, N.C.

GOAL: Manage North American logistics in-house, rather than using a 3PL.

OUTCOME: Lenovo's logistics operation has become 43 percent more efficient.

A convenient location and access to workers with the right skills were critical factors that led Lenovo Americas to build its first U.S. distribution and assembly facility in Whitsett, N.C., just outside Greensboro.

Created through the merger of China's Legend Holdings and IBM's Personal Computing Division, Lenovo makes personal computers, servers, and peripherals in China, Mexico, and Brazil. Before 2008, a third-party logistics provider (3PL) used its own facility in Raleigh to manage Lenovo's North American logistics.

When Lenovo decided to bring this operation in-house, it evaluated several sites in the southeastern United States. A location in the Greensboro metro area would put the new facility just 45 minutes from Lenovo's U.S. headquarters in Morrisville, N.C., and provide access to several interstate highways.

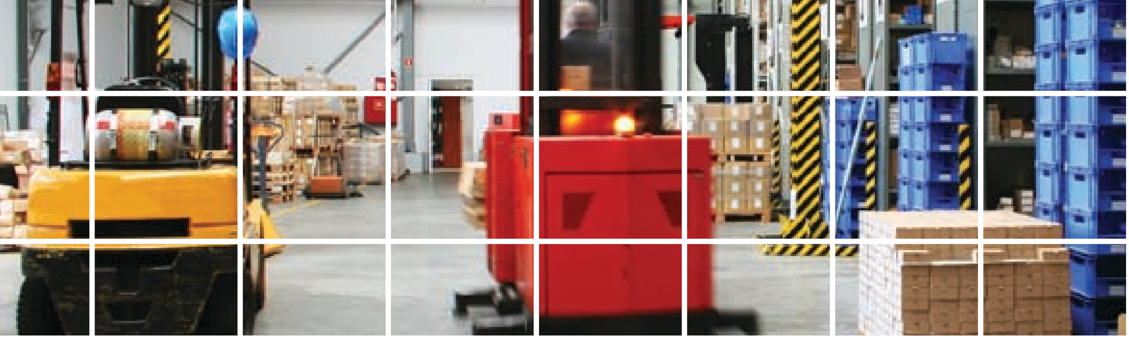
After bringing logistics operations in-house, Lenovo opened its first U.S. distribution and assembly facility in Greensboro, N.C. Cost reductions, efficiency improvements, and reduced lead times are among the benefits.

"This location positioned us to get product to our customers anywhere within two days by truck," says Ken Grissom, general manager of logistics for Lenovo, Americas. "We were looking to decrease lead times and improve service in the United States."

The local pool of employees posed another advantage. Coming from the textile and furniture industries, many workers in the Greensboro area had skills that translated easily into the skills Lenovo required. Also, with relevant training available at local high schools and community colleges, Lenovo could rely on a stream of new employees to meet future staffing demands.

Opened in February 2008, the Lenovo U.S. Fulfillment Center fills orders for North American customers. It also provides value-added services, such as custom-configuring the hardware and software on its computers, and handles reverse logistics.

Since taking logistics in-house and opening the Greensboro site, Lenovo has seen its logistics operation become about 43 percent more efficient. The new location has helped the company make other gains as well. "Our serviceability has improved, costs have improved, and overall lead times have dropped dramatically," Grissom says.



CALL IN THE EXPERTS

Outsource your way to a more efficient supply chain by selecting a knowledgeable and resourceful third-party logistics provider.

When you need a job done right, it often makes sense to let someone else do it. If that's true for a home improvement project, then it's certainly true for many initiatives aimed at improving the corporate supply chain.

Companies worldwide gain significant improvements by outsourcing supply chain functions to third-party logistics providers (3PLs), according to the 2009 *14th Annual Third-Party Logistics Study*, conducted by Capgemini Consulting, Georgia Institute of Technology, Oracle, and Panalpina.

The 772 shippers surveyed report that using 3PL services helped them reduce logistics costs by an average of 12.3 percent. Outsourcing also helped reduce inventory costs by an average of 8.6 percent, cut order cycle times from an average of 10.2 days to 9.8 days, and boost order fill rate from 86 percent to 92.7 percent.

For example, by shifting transportation management functions from a less-effective 3PL to its current partner, Intertape Polymer Group of St. Laurent, Que., and Bradenton, Fla., cut freight spend by 25 percent. "And we've freed up resources to focus on other operational areas," says Sheldon Ellis, the company's vice president of supply chain.

VALUE PROPOSITION

One compelling reason to outsource supply chain functions is that it allows a company to focus internal resources on the work it does best.

With money tight and top talent hard to find, a company must be careful about where it invests. "Most, if not all, of those resources need to be focused on the company's value proposition," says Reggie Dupré, chief executive officer at Dupré Logistics, an asset-based service provider based in Lafayette, La.

A 3PL already has the experts, the process design and management, and

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the technology and IT staff needed to transform a company's supply chain into a strategic asset for delivering value, Dupré says.

For companies whose sales are picking up as the recession eases, but whose budgets don't allow them to add employees, outsourcing logistics offers a way to handle the extra business, says Bob Heaney, senior research analyst, supply chain management at Boston-based Aberdeen Group. "Many companies have found it convenient to move some volume to 3PLs," he says.

In any economic climate, outsourcing provides flexibility to respond quickly to changing market conditions. "It might not make sense to invest a lot of capital in building a warehouse or developing transportation expertise if the market is in transition," says Adrian Gonzalez, director, logistics viewpoint at ARC Advisory Group in Boston.

Outsourcing also offers a way to reduce costs. By combining the freight of 30, 40, or 50 clients, 3PLs give shippers far more buying power than they would command on their own, says George Abernathy, executive vice president and chief operating officer at Transplace, a non-asset-based 3PL headquartered in Frisco, Texas. Transplace, for example, buys billions of dollars worth of transportation every year.

In addition, a 3PL can gather data from multiple vendors and present it through a single interface, providing the intelligence required to make better business decisions. "The 3PL will either be able to provide the services and technologies itself, or will have the necessary relationships with other vendors," Abernathy says.

For a company trying to improve the way it operates, a third-party provider often makes a better change agent than an internal management team. "3PLs can offer a different perspective," Dupré says. "We see opportunities and obstacles companies sometimes don't see; we're able to get people to communicate who don't normally communicate–and sometimes get them to cooperate, and even collaborate."

> The winners in the future will be collaborators who understand that service providers are not the enemy.

And a third party partner is well-positioned to manage not just a one-time boost in performance, but a complete continuous improvement program.

An outsourcing partner can help bring improvements to many supply chain areas. One example is strategic transportation management, where all but the smallest shippers stand to make significant gains through outsourcing. "Strategic transportation management can benefit even small companies with $2 million to $5 million in transportation spend," Abernathy says.

A 3PL can help choose the right transport modes for different kinds of moves. And because of existing relationships with carriers, and the freight volume it moves for other shippers, it can negotiate better rates than most shippers could on their own.

Shippers who negotiate contracts independently–especially if the only technology tool they bring to the process is a spreadsheet–will miss opportunities to collaborate.

"We routinely prepare bids that include two to six different customers," Abernathy says. "We combine pieces of each of their networks to create an attractive bid that secures the highest quality service at the best price."

SMALL COMPANIES, BIG GAINS

Shippers of any size can gain improvements by outsourcing transportation execution, Abernathy says. 3PL employees know the ins and outs of their transportation management system and understand how to wring the most advantage from the technology. Because it manages freight every day for many customers, a 3PL can see opportunities to combine loads in order to improve service, cut costs, and decrease shippers' carbon footprints. Even top-notch transportation technology won't help shippers do that on their own.

"Operating as a silo deprives the shipper of day-to-day transportation execution visibility and collaboration opportunities," Abernathy notes.

Many customers gain improvements from Dupré Logistics' help in operating just-in-time (JIT) inventory programs. Dupré's services include purchasing raw materials, maintaining inventory at correct levels, and doing the actual restocking.

Dupré offers a "best buy" program to support JIT. "Our clients tell us which vendors have the best prices," Dupré says. "They give us the inventory levels they want in their stores or warehouses. We're responsible for keeping products in stock, but not overstocked."

Working with a 3PL to execute a JIT strategy helps Dupré's customers reduce the capital tied up in inventory,

(continues on page 100)

CASE STUDY

Sealing Up the Mexican Market

For Intertape Polymer Group, outsourcing was the key to gaining sales in a marketplace where the company had barely tapped the available potential in the past.

Headquartered in St. Laurent, Quebec, and Bradenton, Fla., Intertape manufactures tape, film, and packaging used in manufacturing, construction, and other industries. The company serves customers in the United States and Canada from production plants and distribution centers in those countries. But until this year, it had not positioned itself to serve customers in Mexico.

"Our sales strategy for Mexico was, 'Sell it to the border,'" says Sheldon Ellis, vice president of supply chain at Intertape. "Our Mexican customers would have to choose a customs broker to receive the freight. Customers were then responsible for importing shipments; paying cross-border fees, duties, and taxes; and arranging for transportation to move shipments from the border to their locations."

That strategy limited Intertape's market in Mexico to large, sophisticated customers. As many manufacturing operations moved from the United States to Mexico, Intertape lost a significant amount of business, Ellis says.

In 2010, officials at Intertape decided to use a third-party logistics service provider (3PL) to help develop a distribution pipeline in Mexico. They chose Transplace, the 3PL that already provided Intertape with transportation management services north of the Mexican border.

SHIPPER: Intertape Polymer Group

OUTSOURCING PARTNER: Transplace

GOAL: Gain more business in Mexico by establishing a distribution center there.

OUTCOME: Steady progress toward Intertape's goal of tripling its business in Mexico in three years.

Leveraging a relationship that Transplace Mexico already had in place, Intertape established an operation in a multi-client warehouse in Monterrey, operated by the Mexican company Basal. The multi-client warehouse gives Intertape flexibility to grow into more space as it acquires more business. Also, Basal operates warehouses in multiple cities, giving Intertape the option to move or expand to other locations in the future.

A third advantage Basal offered was that it and Transplace had already established connections between their information technology systems. "It was almost a plug-and-play IT project," Ellis says. That helped Intertape and Transplace get the Mexico operation up and running in about five weeks.

Intertape started serving Mexican customers from the new DC in October 2010. Large Mexican customers that can manage the international crossing themselves continue to receive products at the border from DCs in the United States. "We offer them the option through the Mexican warehouse, but at an increased price," Ellis says.

Intertape now serves smaller Mexican customers from the Monterrey DC. When a Mexican customer places an order with a Spanish-speaking representative at Intertape's customer service center in Montreal, Intertape's enterprise resource planning system transmits the data via Transplace to the Monterrey DC. If the products ordered are regularly stocked at that location, staff there pick it and Transplace arranges transportation to the customer.

To help secure new business in Mexico, Intertape partnered with Transplace, a 3PL that handles transportation management and customs brokerage in the country.

If the customer orders products the Monterrey DC doesn't stock, Intertape ships that product from the United States to Monterrey, along with regular replenishment stock. "When the shipment gets to the warehouse, we crossdock it, then send it to the customer," says Ellis.

Transplace manages all the transportation, using its own facility in Laredo to consolidate loads headed to Monterrey from multiple U.S. manufacturing sites. Transplace also serves as the customs broker.

Although it has been partnering with Transplace and Basal in Mexico only since October, the new logistics pipeline is already moving Intertape toward its goal of significantly increasing business in Mexico over the next three years.


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(continued from page 96)

and makes them more flexible. "Being able to purchase on a spot basis more frequently allows shippers to respond to the marketplace and increases their purchasing power," says Dupré. It also helps them respond more quickly to fluctuations in customer demand.

Dupré has helped shippers gain improvements through reverse logistics programs, as well. One customer, for example, sells its product in totes made of stainless steel or aluminum.

"The company owns hundreds of thousands of totes, and each one costs around $10,000," Dupré says. Through its reverse logistics program, Dupré Logistics brings the totes back from customer locations to the shipper's facilities to be refilled.

"We minimize transportation costs because we consolidate the totes and move them using intermodal and full truckloads," Dupré says. Because the totes spend less time idling at customer locations, and more time carrying product, the shipper uses fewer units, thus tying up less capital.

Working with a logistics partner also allows a company to modify strategies as changing conditions require–for example, when introducing a new product. "A company might want to build a new product in the United States or Mexico to speed time-to-market," Gonzalez says. "But once the product is mature and in volume production, it might want to shift manufacturing overseas to save money." A company can easily make that shift by taking advantage of a 3PL's distribution infrastructure.

TURNING TO COLLABORATION

When using outsourcing to improve supply chain operations, one key principle shippers should keep in mind is collaboration. Old-style, adversarial relationships between shippers and service providers no longer work in an era where companies are vying for the best employees, equipment, and technology expertise. "The winners in the future will be collaborators," Dupré says. "And they will understand that service providers are not the enemy."

Collaboration among all supply chain parties is a growing trend, due in part to the proliferation of increasingly sophisticated information technology. "The systems allow robust IT collaboration, provide visibility into 3PL operations, and share data among suppliers, trading partners, and shippers," says Heaney.

Traditional outsourcing relationships are based on short-term contracts, generally with one- to three-year terms. They focus on specific statements of work and on transactions, with payments based on the number of pallets handled, truckloads moved, or some similar measure. They provide no incentives for the outsourcing partner to take creative risks or make additional investments, Gonzalez says.

ARC advocates a more collaborative approach called "Performance-Based Outsourcing," or "Vested Outsourcing," which establishes a longer, deeper relationship between shipper and 3PL.

"They approach the contract as a partnership, and try to create a joint business plan," Gonzalez says. The shipper sets a strategic corporate goal, which might have a larger focus than just the supply chain. "Then they explore the ways logistics can impact that goal," he adds.

> It might not make sense to invest a lot of capital in building a warehouse or developing transportation expertise if the market is in transition.

Gonzalez cites the relationship between Unipart Logistics and Jaguar as an example of Performance-Based Outsourcing. In the course of their relationship, Jaguar defined a series of strategic goals, one of which was to earn a #1 ranking from J.D. Power and Associates. One tactic for reaching that goal was to improve customer service in Jaguar's aftermarket parts business.

"Logistics plays a key role in making sure that the right part is in the right place at the right time," Gonzalez says. The effort to improve parts distribution was just one of many projects that Jaguar and Unipart worked on together to increase end-customer satisfaction.

Along with judging a potential partner's ability to collaborate, it's important to learn what kinds of work a 3PL is already doing in your vertical market. "A CPG company, for example, can ask what the provider is doing in CPG beyond the basics," Abernathy says.

Many 3PLs can deliver short-term improvements through load consolidation and other standard tactics. "The question is, how will you save money in year two, three, and 15?" Abernathy says. "A continued quest for improvement will make you satisfied about your outsourcing decision for years to come."

CASE STUDY

Choosing the Right Route

Louisiana Machinery gained more efficient routes, more reliable service, and better control over fuel costs by outsourcing its parts distribution to a single logistics partner.

SHIPPER: Louisiana Machinery

OUTSOURCING PARTNER: Dupré Logistics

GOAL: Redesign parts distribution network to receive product from new Caterpillar DC in Waco, Texas, and move it efficiently to retail locations throughout Louisiana.

OUTCOME: More efficient routes, more reliable service, better control over costs, and opportunities to use dedicated trucks to provide new services to customers.

As Louisiana's statewide dealer of Caterpillar construction equipment, engines, and electrical generators, Louisiana Machinery sells products and parts from 21 locations throughout the state. The company used to receive its parts deliveries from Caterpillar facilities in Morton, Ill., and Dallas. It used two 3PLs plus a company-owned truck to bring freight to its warehouse in Lafayette, La., and then to its retail locations.

In 2008, Caterpillar announced that it was moving its parts distribution to Waco, Texas, forcing Louisiana Machinery to redesign its logistics network.

Company officials considered four possible solutions–three involving the use of a 3PL, and one that would have the company purchase its own equipment and employ its own drivers. "We were looking for one process, not something pieced together with multiple companies," says Troy Matherne, general parts manager at Louisiana Machinery.

The company chose Lafayette-based Dupré Logistics, an asset-based 3PL, in part because Dupré had depots in all the locations where Louisiana Machinery does business. Dupré's ability to provide backup equipment and drivers for the lanes where it provided dedicated capacity also was important.

Working with Dupré also eliminated the chance that a carrier would add a fuel surcharge when the price of diesel rose, but neglect to remove it when the price went down. Louisiana Machinery and Dupré reached an agreement about pricing that Matherne says is fair to both parties. "We make weekly adjustments to the fuel price to reflect true fuel costs," he explains.

Louisiana Machinery's optimized distribution network cuts transport costs, boosts routing efficiency, and helps 3PL drivers make parts deliveries on time.

Dupré started working with Louisiana Machinery in June 2009. Before it started hauling freight, the 3PL analyzed the company's distribution network to optimize delivery routes. "Dupré helped us determine a realistic time between routes and how long it takes to get from Point A to Point B," Matherne says.

For example, Louisiana Machinery used to run its own truck and driver between Lafayette and its Prairieville and Hammond facilities. A contractor carried freight from Lafayette to Reserve, which is less than one hour's drive from either Prairieville or Hammond. Dupré helped analyze the needs and constraints involved in serving each location, including the product hauled and the equipment required.

"We realized we could accomplish the move with one truck instead of two," Matherne says. The savings from that discovery offset some of the additional costs that Caterpillar's move to Waco had created.

Other efficiencies emerged as the 3PL relationship evolved. For example, in order to get parts to Bossier City at 6:30 a.m., Dupré started running a truck there, then backtracking 90 miles to take parts to Mansfield. But by implementing good management practices–such as making sure drivers stopped to refuel on their empty return trips, not when they were making deliveries–Dupré managed to tighten up many routes. It saved so much time that now it can drop parts in Mansfield first and still reach Bossier City by 6:30.

"Dupré Logistics does a good job of sticking within the time parameters and making sure parts typically arrive on time," Matherne says. "That's what makes the arrangement work."

Because the contract makes Dupré's trucks available to Louisiana Machinery 24 hours a day, company officials now are exploring opportunities to use those assets when they're not delivering parts. "Our 2011 goals include determining what services we can offer customers that also benefit us and are cost effective," Matherne says.

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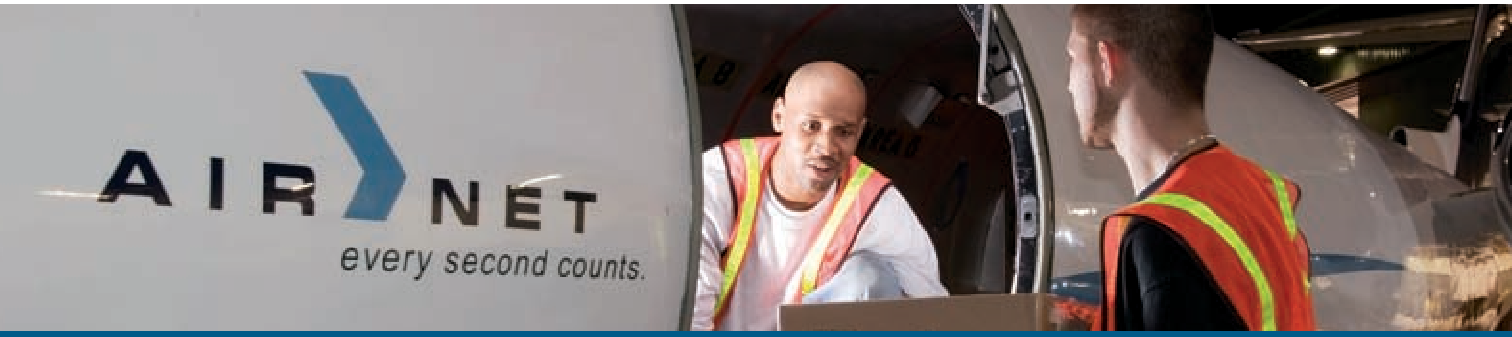

BETTER DATA, BETTER RESULTS

New technology solutions help improve inventory visibility, increase routing agility, manage labor more effectively, and capture valuable information from the field.

How can you use information technology (IT) to improve a supply chain? The real question is, how can you not?

From vendor management to demand forecasting, from logistics network design to transportation planning and execution, from warehouse and yard management to global trade–there's not just an app for that, but a vast marketplace of competing solutions.

The cutting-edge logistics technologies of 20 years ago–satellite tracking, route optimization, handheld radio data collection–have grown into standard tools of the trade. But just as technology continually evolves, supply chain professionals continually discover new ways to put the latest solutions to work.

Here's a look at how some companies are using IT today to gain greater supply chain value.

I CAN SEE CLEARLY NOW

As the global recession forces companies to work harder to stay profitable, one strategy popular with retailers is to develop private-label brands.

"This approach provides greater supply chain control," says David Landau, vice president of industry marketing at logistics IT vendor Manhattan Associates, Atlanta. "Companies gain much better margins with their own products than they do when they buy from a supplier."

But when a U.S. retailer becomes a

Companies can achieve five- to eight-percent rate reductions on certain lanes by monitoring their data.

brand owner, it must manage a longer and more complex supply chain than when it orders products from suppliers with U.S. distribution centers (DCs). While the cycle time on orders placed to a domestic supplier might be two to four days, it can take weeks for retailers' own products to ship from overseas factories and be delivered to stores.

"Without good visibility, inventory costs can spiral out of control because retailers need higher safety stock," Landau says.

DATA, DATA, AND MORE DATA

To gain that visibility, a company might collect data from dozens or hundreds of trading partners, including contract manufacturers, carriers, and third-party logistics providers. Some partners deliver data via electronic data interchange. In other cases, the shipper might establish a Web portal where partners can enter product and shipment status information.

To ease the way for its customers, Manhattan Associates offers a product called *Extended Enterprise Management*. It includes a Web portal for collecting data from partners, and a visibility tool that uses the data to create a picture of supply chain activity.

Good visibility tools can also help shippers make better connections between one end of the supply chain – where manufacturers order materials – and the other – where cashiers ring up sales. Jonathan Byrnes, a senior lecturer at MIT and president of consulting firm Jonathan Byrnes & Co., cites the example of Li & Fung, a Hong Kong-based supply chain specialist that contracts for materials and manufacturing on behalf of numerous retailers.

"Li & Fung is tied into retailers' point-of-sale systems worldwide," Byrnes says. In October 2008, at the start of the global financial crisis, consolidated data from those systems alerted Li & Fung to the precipitous drop in consumer demand even before retailers had noticed the change.

"The company was able to read the demand throughout the world, then adjust the whole manufacturing system way before anybody could tell them to do it," he says. That move helped to ensure that no one got stuck with more materials or capacity than they needed.

Visibility tools also help companies respond faster and more flexibly to changes that occur while product is in transit. "When a shipment arrives at the port, logistics managers can assign, reallocate, or postpone the inventory as supply and demand fluctuations dictate," says Bob Heaney, senior research analyst, supply chain management at Aberdeen Group in Boston.

PLAN, AND PLAN AGAIN

Of course, visibility provides only half the solution for rerouting inbound shipments on the fly. "You need an optimization engine that can run through all the different alternatives," says Heaney.

Many vendors offer solutions that can plan and re-plan a load's handling from the time a shipper places an order until the time it receives the goods. These systems consider loads down to the pallet, carton, or case level, determining how to load them for ocean transit and as they move into the intermodal network.

"Optimization and containerization routines allow companies to analyze alternatives and shift modes to save on freight costs, or to reallocate the inventory," Heaney says.

IN IT FOR THE LONG HAUL

In addition to optimizing transportation in near-real time, IT can help companies improve longer-term transportation arrangements. Many companies put their transportation lanes out to bid only once every two to four years. But that's not the most effective way to manage procurement in a carrier market that's in turmoil and short on capacity, Landau says. Companies should go out for bid every year, and they should manage procurement with something more sophisticated than a spreadsheet.

Advanced tools can not only figure out the best combination of carriers, rates, and routes, they can also perform incremental bid optimization, which involves monitoring lane performance throughout the year.

"By looking at the entire network only once every few years, you can miss some low-hanging fruit," Landau says. By continually monitoring rates, volumes, and carrier performance on individual lanes, companies can adjust lanes that aren't performing well. They might replace carriers that are missing on-time performance targets. Or, if they discover the volume in certain lanes is greater than anticipated, they might be able to renegotiate rates on those lanes.

"Companies can achieve five- to eight-percent rate reduction on lanes by monitoring their data," Landau says.

Just as shippers can optimize transport asset use, they can also use IT to

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optimize human resources. Warehouse operators have long used labor management systems to determine the best way to perform a task and how long it should take, and to measure employee performance against that benchmark. In the next wave of improvements, companies are using historical data to predict labor requirements and assign the right employees to tasks.

Manhattan Associates' solution evaluates a warehouse's historical demand and available labor, including individual workers' skill sets and past performance, then formulates worker assignments and scheduling recommendations. The system also monitors performance in real time and, if the work falls behind, recommends adjustments to get the warehouse back on track.

BREAKING DOWN THE WALLS

IT also offers opportunities to improve revenues, breaking down the walls that separate different sales channels. Multichannel retailers are trying to use all the inventory at their disposal, wherever it's located, to satisfy all kinds of customers, Landau says. That includes customers who order online but want the product delivered to a store, those who can't find an item in a store and want it shipped from a DC or another store to their home, and every other possible combination.

"Retailers should use all their inventory to make sure a sales opportunity does not slip by," Landau says. A distributed order management system meets this challenge by allowing retailers to tap into all their inventory–in stores, in DCs, in transit, and at suppliers' DCs–to fulfill demand from all channels.

Along with solutions created for supply chain applications, some recent trends in the broader IT market also offer ways to realize supply chain improvements. One such trend is the use of Software as a Service (SaaS), or on-demand technology. Instead of licensing software packages, companies contract with service providers that host the software, store the data, and provide access through a Web browser. Clients pay for the service based on usage.

Shippers are using SaaS to manage transportation, gain visibility, and collaborate with service providers and trading partners. Because these systems are more secure than they used to be, companies are more apt to trust them with confidential data.

> Mobile applications allow employees to be productive on the front lines.

Another IT trend that offers benefits to shippers is the explosion of mobile applications. "All the major technology vendors are investing in mobility and extending their applications through mobile devices such as smartphones," says Adrian Gonzalez, director, logistics viewpoints at ARC Advisory Group in Boston. "These tools allow employees to be productive on the front lines, and not have to be tethered to their desktops or laptops."

Of course, mobile technology has played a role in logistics for a few decades, since carriers started installing satellite tracking systems in trucks and manufacturers began adding radios to handheld bar-code scanners. But the latest wave of small, inexpensive, and versatile mobile devices lowers the barrier for a range of logistics applications.

"GPS-enabled phones let carriers and shippers more easily track drivers and trucks," Gonzalez says. "They can communicate in the field with them, and have the driver execute transactions much more seamlessly and productively than in the past," Gonzalez says.

Although the applications aren't yet well-developed, social media may also hold promise for supply chain improvements. "Many companies are beginning to experiment with social media technologies as a platform to collaborate with external trading partners, suppliers, carriers, and customers," Gonzalez says.

This new trend in collaborative communication will take hold in earnest as the next generation of employees enters the workforce. "They're accustomed to using tools such as Facebook and Twitter rather than sending e-mail," he notes.

DIP IN A TOE

As shippers consider new technologies to help gain supply chain improvements, keep in mind that you don't need to plunge into a large, new, and possibly costly system implementation headfirst. You can start by getting your feet wet. There's a trend toward self-funded IT projects–initiatives of limited scope that bring quick returns, which a company then uses to fund an extended solution.

"You can implement a transportation procurement system and quickly net a six- to eight-percent reduction in transportation spend, which may, in turn, fund a full transportation management system rollout," Landau says.

That's yet another way in which shippers can tap the latest in technology to achieve a broad spectrum of supply chain gains. ■

CASE STUDY

WMS: Forzani's Winning Play

SHIPPER: Forzani Group

TECHNOLOGY: Manhattan Associates' Warehouse Management solution

GOAL: Gain visibility into inbound orders to support crossdocking and other modern logistics strategies.

OUTCOME: Ratio of units moved to labor dollars spent increased 19 percent. Per-unit operational costs decreased 31 percent.

Since its start in 1974 as a single-site athletic footwear store, Forzani Group has been expanding without catching its breath. Opening new locations and aggressively acquiring other businesses, it has grown into Canada's largest sporting goods retailer, with more than 334 corporate-owned stores and more than 229 franchise locations. The stores operate under a variety of names, including Sport Chek, Atmosphere, Hockey Experts, and Fitness Source.

In 2002, officials at Forzani Group realized that the company's growth had outstripped the abilities of its warehouse management system (WMS). "Logistics practices over the years have changed," says Keith Lambert, senior vice president, supply chain management at Forzani Group. "But our WMS hadn't changed in accordance with current practices."

One practice that Forzani Group wanted to introduce involved crossdocking. Before shipping product to a distribution center (DC), company officials wanted vendors to label each case to indicate which store was its ultimate destination. "We would simply scan that label on receipt and upload all the received items into the database," Lambert says. "Then the products would move to the outbound side and get loaded on a truck immediately for transportation to the store." This tactic would reduce the time required to get a case in and out of the DC.

Forzani Group also wanted to acquire better data on inbound orders, and on inventory's status as it was received, stored, picked, and packed. And it wanted a WMS that offered better putaway and picking logic. "Some of the logic in our older system was not conducive to current warehouse efficiency trends," Lambert says.

In late 2003, Forzani Group chose Manhattan Associates' Warehouse Management solution to replace its old WMS. It got the system up and running in 2004.

One improvement the new WMS provided was a better view of orders. "Visibility into the receipt and the advance ship notice has improved dramatically," Lambert says. Also, the ability to receive orders in case quantities, marked for their destinations, and crossdock them for immediate shipment has made the DCs much more productive. "We were previously doing bulk receipts and packing them on our own," he says. "We are now involving our vendors in the process, having them label shipments, and simply crossdocking goods that come into our facility."

Thanks to those changes, Forzani's ratio of units moved to labor dollars spent has improved by 19 percent. And, by gradually refining its warehouse practices over the years since implementation, Forzani has cut per-unit operational costs by 31 percent.

The new WMS also has created improvements on a broader scale. Until recently, Forzani served its stores across Canada from two DCs, one in Calgary and one in Toronto. But improved operations have made the Calgary DC redundant.

"As the warehouse becomes more efficient, and we're able to move more units per labor dollar, we're able to reallocate more units into that warehouse to be processed," Lambert says. The more product one warehouse can handle, the less need there is for a second one, so Forzani is closing the Calgary DC. As of January 2011, the company will serve its entire national network from Toronto.

And there are still more opportunities to use the WMS to improve productivity. For example, the solution includes a slotting optimization module that Forzani has not yet put to work. The company has created a five-year road map for implementing that, and other capabilities.

"Using the tools more effectively will allow us to continually improve our operation," Lambert says.

SUPPLY CHAIN GAIN

SHADES OF GREEN

Sustainability efforts can help companies grow more efficient supply chains.

From renewable energy development to carbon emissions calculators to recycling and reverse logistics, lean packaging, LEED-certified warehouses, and hybrid electric delivery vehicles, green is everywhere. Consumers are buying the idea, government is regulating it, carriers and logistics service providers are mandated by it, manufacturers and retailers are selling it, and supply chains are posturing to varying degrees of greenness.

Even with the media and market attention that blankets sustainability, there are leaders and laggards, and those looking to take advantage of a good thing. Businesses are capitalizing on obvious, inexpensive ways to operate more efficiently and protect the environment; many have followed suit for pure economic reasons.

"Energy efficiency in machine use and processes has been industry's biggest win," says Patrick Penfield, assistant professor of supply chain practice at Syracuse University's Whitman School of Management. "We have a long way to go, but we have made strides compared to energy consumption 10 years ago."

Much of this progress is a consequence of better technology, processes, education, and efforts to mitigate global fuel price volatility.

SETTING THE STANDARDS

Penfield cites material waste as an area that needs improvement. In the context of supply chain management, this raises an interesting point.

Businesses can individually create green objectives, benchmark progress, and continue to remove waste from the process. Internal functions within an organization can do as much. But efficiencies gained at one touchpoint may be lost at another, unless standards are broadly communicated and enforced.

In trying economic times, compliance is often challenged for one simple

reason–true supply chain sustainability requires time, money, talent, and thought.

The business case for being sustainable is saving money. The global economic recession placed industry in a position to squeeze costs out of the supply chain. In the process, many companies achieved notable sustainability gains–whether they realized it or not.

A RED LIGHT ON GREEN?

When *Inbound Logistics* surveyed third-party logistics providers in early 2009 as part of its annual *3PL Market Perspectives* industry overview, nearly 40 percent of respondents indicated that sustainability was a top priority among their outsourcing customers. In 2010, that number dropped to 21 percent. Why the difference? Did companies suddenly give the red light to green?

To some degree, this marked drop is a matter of perspective. Businesses that entertain opportunities to be more efficient–optimizing transportation, realigning distribution networks, outsourcing more–don't necessarily identify these efforts as "green." When the recession was in full swing, day-to-day optimization and cost reduction were a priority over everything else.

Creating more efficient vehicle routes and mandating drivers not to idle trucks are, first and foremost, operational achievements. By comparison, purchasing a new fleet of hybrid-powered trucks or holding suppliers compliant to specific sustainability operating procedures *are* green progressions. In reality, efficiency and sustainability are intrinsically tied and difficult to tell apart.

For the most part, these instances of shared gains are positive. It's hard to find fault with companies that grow leaner and greener together. Identifying and executing a business case for protecting the environment is a necessary first step.

> Some companies, unfortunately, are taking advantage of the green movement. But sustainability is here to stay, especially with the growing population base and lack of resources.

A problem arises, however, when a sustainability improvement is the byproduct of another optimization–and not directly attributed to a specific green goal. Its value and ROI often become obscured.

ISOLATING SUSTAINABILITY INVESTMENTS

A recent report by global consultant Accenture speaks to this issue, and the challenges companies face trying to unbundle, then distill, the real worth of sustainability investments.

Can Business Do Well By Doing Good?, by Bruno Berthon, David Abood, and Peter Lacy–all managing directors in Accenture's Sustainability Services global group–offers follow-up insight on a 2010 Accenture-United Nations study that captured how global CEOs are dealing with the long-term perspective of sustainability and the near-term pressures of the bottom line.

While research suggests that sustainable business practices correlate closely with high performance, "on an operational level, sustainability is not yet seamlessly woven into the fabric of business," the authors write. "Executives still must make, almost daily, difficult trade-offs between practices that meet short-term business needs and those that will contribute to sustaining the needs of future generations."

This snag is apparent within many organizations and supply chains, where individual functions and departments, or suppliers and service providers, arbitrarily work toward different sustainability standards. While some might cut corners to reduce costs, others hold fast to their own guidelines–perhaps to their own detriment in meeting customer expectations. Relatively few companies in the world have the clout and sophistication to dictate comprehensive compliance inside and outside the enterprise.

"This conflict can be seen on another level, as well," Accenture's analysts continue. "Investments in sustainability today are seldom reflected in next quarter's earnings announcement. This misalignment…a function of basic financial performance analysis, must be reconciled before sustainability can be integrated and embedded in operations–that is, before sustainability becomes a truly integral part of what it means to be a high-performance business."

Geographic, political, and cultural

factors make widespread compliance even more challenging for globe-spanning enterprises.

This isn't to say that businesses aren't trying or have been unsuccessful in their efforts. There are some well-publicized examples among both large and small manufacturers and retailers–from Stonyfield Farm to Walmart–that have committed significant capital and time toward making sustainability a seamless function within the extended value chain.

As critical links between supply and demand, many carriers and 3PLs have helped steer customers along a greener path as well. This remains a current and future goal for the transportation and logistics segment at large.

There's something to be said for the cascading impact green best practices can have within an organization, then within a supply chain, then across other supply chains. In addition to standardizing processes, increased communication, visibility, and collaboration are bound to follow. Internally, many forward-thinking companies are developing their own sustainability benchmarks and using them to measure

CASE STUDY

The Fruits of Green Labor

SHIPPER: Edible Arrangements

SUSTAINABILITY PARTNER: Thermo King

GOAL: Transition from engine-driven refrigeration units and larger vans to smaller vehicles with electricity-powered refrigeration.

OUTCOME: Increased fuel efficiency from 8 mpg to 24 mpg, while saving more than 27 percent on fuel use.

The business case for being greener is often tied to better transportation economy and fuel efficiency. Even the slightest tactical improvements can have a considerable, and sometimes unexpected, impact on sustainability gains.

Wallingford, Conn.-headquartered Edible Arrangements discovered as much when it began working with Thermo King to devise a new means for refrigerating its fleet of delivery trucks.

"We had been using engine-driven refrigeration units, but in late 2009, we decided to move away from that," says Kamran Farid, COO of Edible Arrangements, a fresh-fruit purveyor that delivers a variety of arrangements made fresh each day for consumers in more than 900 locations around the world.

The decision to partner with Thermo King–a brand of Ingersoll Rand that develops temperature- and climate-control products for the transportation industry–coincided with a broader strategy to streamline the size of its U.S. delivery vehicles. The company was using Ford E-150 vans to deliver 10 to 12 arrangements on average–far more heavy-duty capacity than was necessary. Moreover, the refrigeration for these vehicles was powered off the truck engine, which required idling the engines to power the units and keep the product cool.

"We operate 100 stores in California," says Farid. "When it's regularly 90 degrees, drivers are idling vans to keep everything cool. Even during Connecticut summers, bringing vehicles to temperature at peak times is costly."

Edible Arrangement franchises would also often use idling trucks as another means to increase cooling capacity outside a facility when volumes warranted–contributing to unnecessary fuel use and emissions expenditure.

The Pilot Light

Before settling on an appropriate refrigeration solution, Edible Arrangements first wanted to transition to a smaller-footprint vehicle. The company's UK franchises had pursued a similar pilot phase five years earlier with the use of Ford Transit Connects–boxy-shaped delivery vans common across Britain and Ireland.

"As it was moving away from the old Ford E-150 cargo vans, Edible Arrangements wanted vehicles with greater fuel economy," says Frank Pryzwara, district sales manager for Thermo King. "It had been testing

performance among business partners.

"Companies are grappling with this issue," says Penfield. "Organizations are working with suppliers to institute their own environmental policies, then follow up with audits."

These types of progressions will bring greater transparency to sustainability efforts and hold businesses accountable for meeting customer, industry, and government expectations. In the meantime, some will continue to spin the marketing cachet of "greenness" without backing it up–largely because its true value has yet to be fully appreciated.

"Some companies, unfortunately, are taking advantage of the green movement. But I truly believe sustainability is here to stay, especially with the growing population base and lack of resources," says Penfield.

Sustainability in its purest form implies continuity. It's not a one-off; it carries the entire lifecycle of a product from source to shelf; and its empirical value, in relation to revenue growth and cost savings, still needs to be more broadly qualified.

That's the tomorrow for today's supply chain sustainability visionaries.

Ford Ranger pickup trucks with refrigerated units in the cargo bed, but it was sacrificing too much cube capacity."

There were also concerns about vehicle wear and tear. So Edible Arrangements took an idea that was working well in Europe–where geographic spaces are more constrained and delivery vans typically smaller–and, with Thermo King's help, began acquiring and retrofitting Transit Connects for U.S. use.

"We began working with local Ford dealers, Edible Arrangements, and its supplier Sub-Zero Insulation & Refrigeration Technologies to figure out how to best insulate these new units," says Scott Bates, truck product manager, Thermo King.

During this process, Thermo King developed its B-100 all-electric refrigeration unit specifically purposed for Edible Arrangements' light-duty vehicle needs. Now the unit is available as an off-the-rack product.

The B-100 reefer uses a vehicle's electrical system to cool cargo space regardless of whether the engine is running. Refrigeration units can also be plugged into any standard 110-volt outlet and charged at any time. For example, franchise stores are now staging shipments earlier for delivery–without wasting fuel and polluting the environment.

Insulation was also a key part of the development process, given the frequency of stops that Edible Arrangements' delivery drivers make during their daily routes. "We open van doors a lot–five to six times an hour–so we need quick recovery," says Farid. "Insulation is very important."

Sub-Zero's insulation holds in temperatures more reliably within a 35- to 40-degree range, which is necessary for maintaining the integrity of Edible Arrangement's products. The company also uses monitoring systems in the cab to track temperatures in the refrigeration unit.

Fuel for Growth

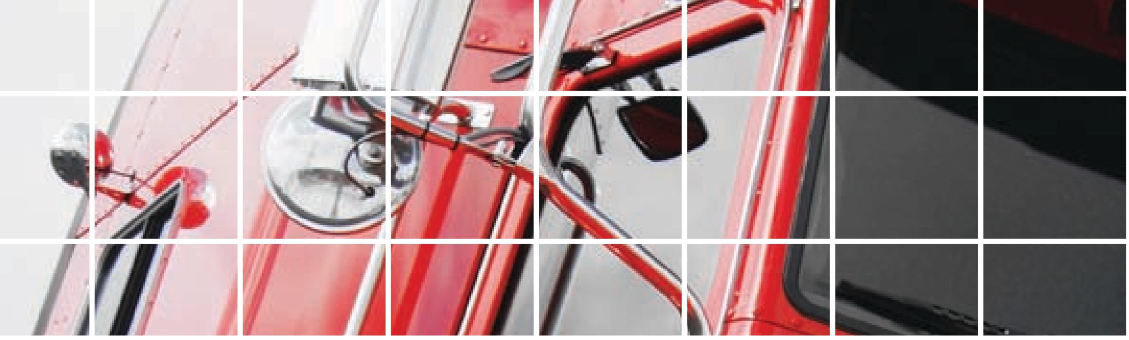
Moving forward, every new Edible Arrangement franchise that opens will use the Ford Transit Connect with insulation provided by Sub-Zero–and for good reason. The fuel savings the company has achieved during the past two years has been remarkable.

"The E-150s used to get eight to 12 miles per gallon," says Farid. "Our Transit Connect vans get 24 miles per gallon. We've saved more than 27 percent in terms of fuel use. We operate 365 days a year, with vans idling two hours a day–and wasting one gallon per hour. We can now save up to 730 gallons a year per vehicle with these new units."

The next progression for Edible Arrangements and Thermo King is to look at the possibility of using hybrid-powered vehicles to transport product.

"Edible Arrangements has a unique distributed product," says Bates. "It's the type of business that can drive the size and types of vehicles it uses, as well as objectives to go green."

Suffice to say, the company found a perfect freezer fit with Thermo King.



SUPPLY CHAIN GAIN

TRUCKING TACTICS

Strategic transportation management puts shippers on the road to increased fuel economy and improved asset utilization.

Over the past few years, shippers have worked to squeeze costs from their trucking operations. Opportunities to increase fuel economy, better utilize assets, and create greater synergies with other logistics functions are driving further efficiency gains and best practices.

Transportation optimization has become a buzzword throughout industry, filling meeting agendas and visibility gaps between procurement and logistics functions. But it's no longer a matter of simply devising better routes or consolidating fuller loads.

"We have reached the point where nearly everyone has been exposed to the term supply chain management," says Chuck Franzetta, CEO of Franzetta and Associates, a Boalsburg, Pa., supply chain management consulting firm. "Now it's a necessity that firms incorporate transportation and logistics into their planning at the beginning."

CHALLENGES DOWN THE ROAD

The move to optimize transportation can't come at a better time. As industry treads carefully in an awakening economy, challenges loom down the road.

"As the economy improves, whether slowly or as a result of some big event, capacity will be tight, given the exit of so many carriers from the market," says Chuck Clowdis, managing director of North American markets for IHS Global, a Lexington, Mass.-based economic think tank. "Driver availability can only worsen. The demographic group is

smaller, and many drivers have found other work."

If that doesn't offer reason for pause, fuel prices certainly will. "The rising cost of crude oil, and the attendant rise in diesel prices, will impact transport budgets," adds Clowdis. "Even at $100 per barrel for crude, fuel surcharges will soar."

Given future challenges in the motor freight space, it's imperative that shippers think about how transportation fits within the broader supply chain puzzle, and begin to piece together new ways to align different logistics functions.

PICKING PARTNERS

More than ever before, shippers feel pressure to find transportation partners capable of handling a load and delivering optimal service. When the market was soft, many scoured freight boards and lanes for cheaper rates. Now, with so much flux on the capacity side, motor freight buyers are trying to lock up assets, or pare down core carrier networks and consolidate volumes with trusted partners.

"Determining which carriers to remain allied with seems daunting at the moment," observes Franzetta.

He sees the potential demise of YRC Worldwide, and recent posturing by FedEx, Heartland Express, and others intent on taking even more market share from YRC, as a chance for some shippers to gain near-term rate relief. Discount incentives will be available to those who make commitments early.

"As the fate of YRC becomes increasingly apparent, however, those rates will climb at a fairly steep angle, until new players emerge and capacity begins to balance over the next few years," Franzetta adds.

As a consequence of these pricing pressures, shipper and carrier collaboration will have to grow anew.

"Dialog between parties can make overall transportation planning smoother; eliminate supply chain glitches; prepare for unexpected events; and simply replace adversarial relationships with sound business practices that are mutually beneficial to both transport service buyers and sellers," says Clowdis.

With capacity in flux, many shippers are trying to lock up assets, or pare down core carrier networks and consolidate volumes with trusted motor freight partners.

CUSTOMER SERVICE AND PLANNING

Even as economic recovery leads the shipping industry into another gloomy scenario, many companies are working collaboratively with logistics service providers and carriers to develop more innovative over-the-road solutions, especially in intermodal movements. With proper planning and attention to detail, shippers can augment their surface networks by looking off-road.

Aggressive play among trailer-on-flatcar (TOFC) service providers is one area where shippers are cherry-picking new


To the layman, logistics is about being in the right place at the right time with the right shipment. To us, it's about keeping promises and keeping customers happy. Our customized logistics solutions offer everything from shipment tracking and reporting, to stocking and warehousing. Which means no matter what supply chain hoops you find yourself jumping through, we can help you navigate them with optimum efficiency and a little bit of swagger.
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opportunities to increase capacity and expedite intermodal.

"Better service and the associated cost implications will provide a transportation alternative some shippers have failed to fully embrace," says Franzetta. "As service enhancements continue, with heavy private and public investment, alternative use of trailers will prove appealing to companies that might not have previously considered the opportunity."

But the efficacy of intermodal is only as good as the service–and the planning. Regardless of mode, shippers need to identify "quid pro quo" service and cost changes that might have impacts elsewhere in the supply chain. And because first- and final-mile deliveries inevitably land in and on trucks, the motor freight area is ripe for further strategic improvement.

"Customer service perceptions have changed out of necessity in this economic slowdown," says Clowdis. "Speed-to-market has been analyzed to the point that 'delivery to the store at any price' has been replaced with leaner inventory all along the route from plant to ultimate buyer.

"Shippers need to do deep analysis that includes not only transport costs, but actual required delivery dates and the cost of carrying inventory in transit, on the shelves of a distribution center, and at the retail store. Those elements are frequently overlooked and must all be part of the equation," he adds.

TRUCKING AND CUSTOMER SERVICE

Trucking will always be a transportation and logistics fundamental–a core area rooted in nuts-and-bolts mechanics. But that doesn't mean organizations can't look at the trucking function in a more sophisticated way, as an integral part of the supply chain.

> Trucking will always be a transportation fundamental. But that doesn't mean companies can't look at the trucking function in a more sophisticated way, as an integral part of the supply chain.

The same logic holds true for customer service. They both share a similar cascading effect that when put together–quality, on-time delivery, for example–yield tremendous opportunities upstream and downstream in the supply chain of command. "The service you provide your customers and receive from your vendors and providers is paramount," says Franzetta.

But over-the-road shippers need to be proactive about customer service and address expectations up front, when they begin tinkering with tactics, entering new transportation arrangements, and creating benchmarks for existing partnerships.

"If you deal with customer service at the end of the process, you're at a disadvantage," explains Franzetta. "But incorporate it into the overall planning, and you've got the opportunity to tip everything to benefit you, your vendors, your customers, and your carriers."

TRUCKING AS SUPPLY CHAIN ENABLER

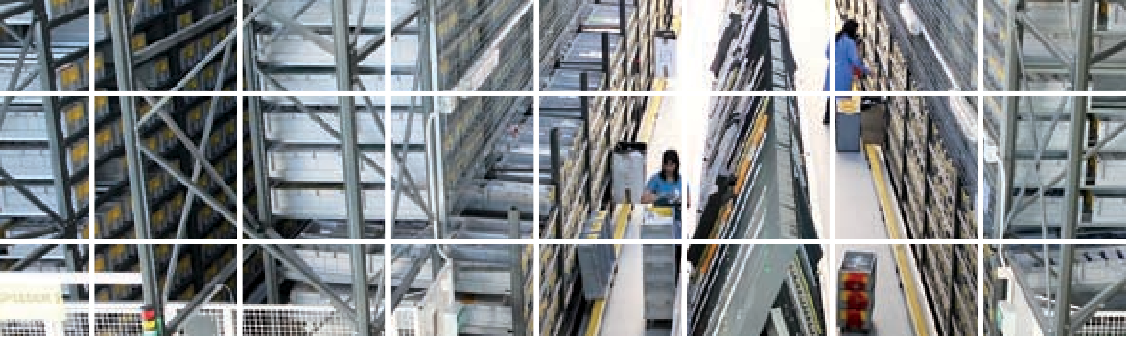
That is the power of viewing motor freight as a supply chain enabler and not just another logistics function. The supply chain is driven by the forces used to connect its links.

"A sound transportation management plan can help mitigate risks when a supplier fails, for example; or a critical customer needs to alter its receiving distribution center," says Clowdis. "Nimble transport partners driving a supply chain can smooth bumps in the flow from raw materials procurement, to plants, to DCs, to customers–and even in any reverse logistics operation."

Given future challenges in the motor freight space, it's imperative that shippers begin thinking about how transportation fits within the broader supply chain puzzle, and piecing together new ways to align different logistics functions.

"We operate in a totally different world than only a few years ago," says Franzetta. "Everything has changed and everything will keep changing. Unless firms embrace a total commitment to integrated supply chain management, which includes interfacing with their customers, they will be among the walking dead."

And for those still left in the mix? They'll keep tinkering with their trucking networks with an eye toward even better supply chain service. ■



SUPPLY CHAIN GAIN

SIMPLIFIED SORTING

Warehouse automation allows distribution centers to take a hands-off approach.

Materials handling professionals share a favorite expression: If you apply automation to a bad process, worse things happen faster.

It's the nature of the game in today's warp-speed world to throw technology at a problem and expect a solution. IT can help, but without proper due diligence and planning–consideration for why problems may be occurring in the first place–efforts to automate can be anything but routine.

Warehouse mechanization is an area that businesses routinely view with an eye toward efficiency by better utilizing human resources and inert assets.

"Reducing staff has always been the justification for arming distribution centers with automated systems. In today's global market, however, cost reduction alone is no longer enough to ensure survival," says Lawrence Dean Shemesh, president and CEO of OPSdesign Consulting, a Marlton, N.J.-based warehousing and distribution design consulting firm.

Shemesh has witnessed a lot of change during his career; one of the most profound being a shifting cost justification for warehouse automation. "In decades past, an old business adage applied: 'You can have it fast, good, and cheap–pick any two,'" he says.

Today, materials handling equipment manufacturers and integrators believe they can deliver all three. But businesses resist sinking capital into projects that aren't easily reversible. So they aim high, move slow, and inevitably stick with the status quo.

"Companies are challenged with extending the life of aging hardware," says Kelly Reed, partner, materials handling integration, for Raleigh, N.C.-based consultant Tompkins Associates.

"There is pent-up demand for expanding or modifying automated warehouses," he says. "Capital is still tight, however, so DC managers are strategically targeting refurbishments or small upgrades pending a turnaround in credit availability," he says.

> Companies are emphasizing denser storage to save space; ergonomics; and demands for increased accuracy.

To make matters more difficult, businesses often wait until the last minute to engage new projects, which creates tighter deadlines for manufacturers and integrators to complete new installations on time and within budget.

FINDING THE RIGHT FIT

Due diligence may take longer, and businesses may rightfully fear the repercussions of rash decisions. But for those that approach automation projects with calculated caution, the returns are manifold.

"Companies are beginning to realize the value of higher levels of automation," says Reed. "They are emphasizing denser storage to save space; ergonomics; and demands for increased accuracy."

Warehouse densification may be a relatively new progression for some U.S. industries, given the expansive spaces available on the market. But with inventory cycle times decreasing, carrying costs rising, and DC consolidation the norm in challenging economic times, companies are looking at practical ways to squeeze more out of less.

U.S. industry is learning from European companies that have long embraced pick-system automation–largely because of constrained spaces, higher labor and land costs, and economic policies that encourage long-term capital investment justified by large upfront investments.

All these factors argue for greater use of automated storage/retrieval systems (AS/RS), which offer a more compact footprint and reduce future real estate costs. The impulse to remove human touches and better utilize warehouse space has catalyzed widespread efforts to automate. But the human imprint will always remain an integral part of warehouse operations.

In this regard, order picking is an area where many businesses see opportunities to facilitate human efficiency and accuracy by automating stockkeeping unit (SKU) movement to and from pick stations and loading docks. There's no shortage of ways materials handling equipment buyers can integrate conveyance, sortation, and racking systems, technology, and labor; but the reasons for doing so are becoming clearer.

"The case for further automation is being fueled by the global trend toward higher SKU counts, smaller orders with higher frequency, compressed order cycle time requirements, and a plethora of value-added services that add cost to every order processed," says Shemesh.

Software controls that provide the brains to the materials handling system have also advanced significantly. "These control systems are more user-friendly and provide real-time information and dashboards that measure and present overall system performance," says Reed. "But we are just seeing the tip of the iceberg. Control systems will take on more sophisticated business rule processes."

Conveyors, sortation systems, and AS/RS are only as smart as the software systems in place to orchestrate movement within the warehouse.

Outside the four walls, the materials handling equipment industry is taking a cue from its customers by consolidating, a trend that could have a mixed impact on buyers. "Mergers and acquisitions will likely continue as the large materials handling companies continue to pursue efficiencies of scale," Reed notes. "While consolidation can help cut costs and drive economies of scale, it also reduces choice and competition."

AUTOMATION INNOVATION

Regardless of how industry moves, innovation will continue to shape the trajectory of how businesses leverage materials handling as a competitive differentiator within the supply chain. For example, automation creates opportunities for warehouses to reduce energy consumption, with controls in place that can intuitively turn off systems when they aren't in use.

More strategically, sophisticated materials handling systems allow DCs to build store-ready pallets comprising multiple different SKUs–an upstream efficiency that is especially advantageous for high-volume businesses and their end customers.

"More efficient picking and packing technologies offer the ability to process orders faster, enabling later cutoff times for same-day shipping, as well as increased pick accuracy," says Reed.

But with businesses wary about investing significant upfront capital in new equipment–and with DC networks in constant flux–setting the right deployment strategy demands a great deal of planning and input from multiple logistics functions and partners.

"The volume of differing approaches warrants detailed data analysis and a thorough understanding of goals and objectives before tackling any automation initiative," says Shemesh. ■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CASE STUDY

Building the Warehouse of the Future

Grocery chain Giant Eagle uses robotic pallet trucks to increase dock-to-stock movements in its distribution facilities. It looks like a scene from *The Jetsons* as un-manned pallet trucks whiz about remotely in an otherwise universal warehouse.

The provider of this futuristic equipment, Pittsburgh-based automation specialist Seegrid, is revolutionizing distribution center flow with its robotic industrial trucks. The company currently carries two models: a 3,000-pound capacity tugger, and an 8,000-pound walkie pallet truck.

Giant Eagle, a food and fuel retailer that operates close to 400 independent and corporate-owned supermarkets and convenience stores in Pennsylvania, Maryland, West Virginia, and Ohio, began piloting Seegrid's robotic pallet trucks two years ago. Today it uses 13 units for both putaway and order selection in two Pittsburgh-area DCs. It's all part of a calculated strategy to create a zero-day inventory distribution facility that pulses with inbound flows. Under the guidance of Larry Baldauf, senior vice president, the company is building the warehouse of the future with a robotic boost from Seegrid.

As the company's name suggests, Seegrid's robotic pallet trucks are programmed to follow predetermined transportation grids within the warehouse. Workers place a robotic truck's forks under a pallet, enter the destination on a dashboard interface, and the pallet truck transports the items to an assigned location. There it unloads, then returns to the original starting point or another selected location for another pickup. A sophisticated laser obstruction system senses potential obstacles in a jack's path and pauses movement until it's clear to move forward.

From putaway and transfers, to long hauls and crossdocking, the Seegrid pallet truck is designed to reduce costs per move and extend workforce productivity. But Giant Eagle is taking these efficiencies another step in "futurizing" its distribution footprint.

Baldauf's strategy comprises two building blocks: first is creating real-time product management flow between inbound and outbound using a WMS; second is augmenting that flow with its own just-in-time wrinkle.

In high-throughput facilities common in the grocery industry, where inventory turns over quickly, aligning inbound and outbound flows to meet retail store demand fluctuations places a great deal of pressure on pallet putaway and order-picking operations–the heartbeat of the warehouse. Giant Eagle is changing the tempo of its DC by using Seegrid's robotic fleet to increase efficiency.

Seegrid's pallet trucks allow Giant Eagle to facilitate replenishment from loading docks directly into the building. Inbound product will generally travel 5,000 miles during an average week; and with so many pallets coming in, the putaway function alone consumes 60 percent of travel time.

"We have been able to directly attack travel time," says Joseph Hurley, senior director of supply chain for Giant Eagle. "The units move through the building so that warehouse selectors stay in their zones."

As the company began integrating Seegrid's robotic jacks into its warehouse operation, it gradually gained greater control over inventory, and recognized that it was carrying too much. "The grocery industry is notorious for having long lead times with a lot of non-value added inventory sitting around," says Baldauf. "With every vendor we work with, we have greatly increased turns and had a positive impact on service."

Baldauf's futurist vision continues to expand as Giant Eagle evolves its use of Seegrid robotics in concert with its WMS and voice-picking technology. But its progression thus far is remarkable.

The company has greatly increased workforce productivity while reducing on-the-job injuries. The warehouse has saved one minute per pallet in terms of daily putaway, while reducing human travel from 750 miles a day to 250 miles using Seegrid's robotic trucks. "From an efficiency standpoint we have reduced manned-travel for putaway 33 percent, and increased hi-lift pallets per hour by 20 percent," says Hurley.

But the real pull has been the warehouse's progression from an average of two days of inventory to a future state reality where product will never sit–the manifestation of a total flow-through facility.

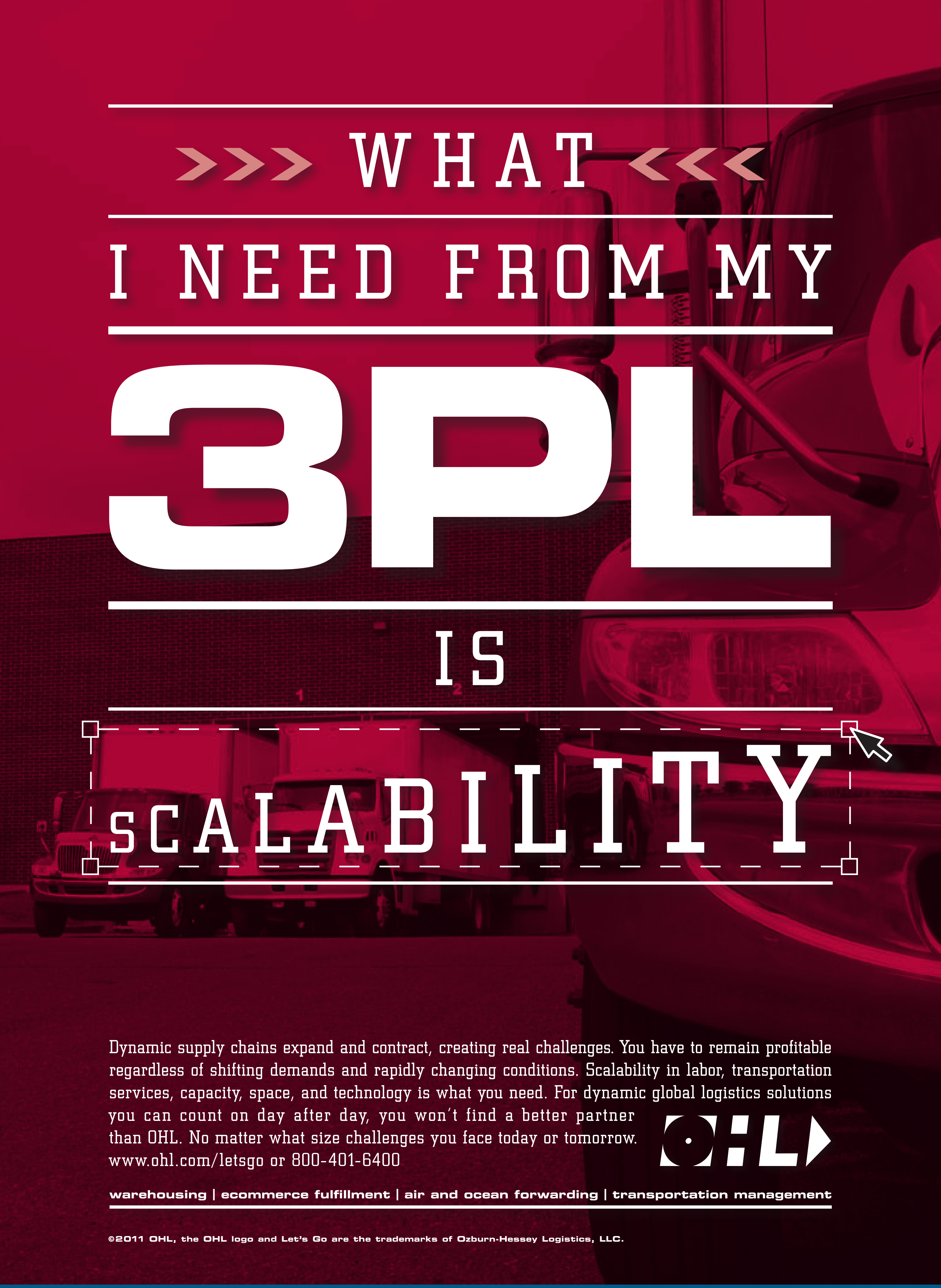
"We want to build the rate of use and replenish directly to the store shelf," says Baldauf. "We want to knock down storage racks."

SHIPPER: Giant Eagle

AUTOMATION PARTNER: Seegrid

GOAL: Increase warehouse productivity, reduce selection and putaway times, and progress toward a zero-day distribution model.

OUTCOME: Saved 1 minute per pallet in terms of daily putaway, while reducing human travel from 750 miles a day to 250 miles using Seegrid's robotic pallet trucks.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Ed Melching, director, Global Logistics, Navistar

THE WHEELS OF CHANGE

When Navistar sought to position itself for worldwide growth across all divisions by recasting its supply chain operations, it wiped the slate completely clean and put an engineer with zero logistics experience in charge. Here's the story of how Ed Melching led Navistar to global growth—and significant supply chain gains. »

Ed Melching, director, Global Logistics, Navistar

Sometimes the pathway to significant supply chain improvement is a road less travelled. For truck and engine manufacturer Navistar International Corporation's Ed Melching, director, Global Logistics, the journey started with a blank sheet of paper. Without any significant logistics experience, Melching took the lead on a five-year project to achieve global supply chain gain and build a scalable logistics platform that would position Navistar for global growth across all its divisions.

This was no small feat for the Warrenville, Ill.-based company, whose subsidiaries and affiliates produce International commercial and military trucks; MaxxForce diesel engines; IC school and commercial buses; Workhorse motor home and step van chassis; private-label diesel engines for the pickup truck, van, and SUV markets; and truck and diesel engine parts and service.

In 2008, after undergoing a grueling third-party logistics provider (3PL) selection process, Navistar chose San Mateo, Calif.-based Menlo Worldwide Logistics, the global supply chain management subsidiary of Con-way Inc., to support it in improving its global logistics network, including managing global transportation providers and regional warehouses, planning lead times, and modeling net landed costs.

Inbound Logistics recently sat down with Melching to get the details on this compelling supply chain saga.

Q You've achieved significant supply chain gains for Navistar during the past two years, yet you had no logistics or supply chain experience. How did you get involved with the project?

A My 20 years of experience at Navistar had all been in tractor and truck product development engineering. I had no clue what logistics was, and had never heard the term 3PL. In engineering, we don't think about logistics, other than to obtain a product's freight rate to include in cost-tracking models.

About three years ago, I was asked to take over Navistar's logistics group and develop a strategy across the enterprise that would help support our growth.

Q How did Navistar's supply chain operate before this project, and what were the key drivers that led the company to overhaul its supply chain?

A The supply chain was regionally based, with independent logistics networks for each principal division–truck manufacturing, engine manufacturing, and service parts. Key drivers for change focused on cost and growth. We needed to reduce overall supply chain costs, and put in place a new strategy and structure that would make cost reduction a continuous process while providing supply chain knowledge resources, structural flexibility, and capabilities to support our global growth initiatives.

Q How did you approach the first phase of the project?

A I attended conferences, talked to our management and key partners, and built a team to assess the state of our supply chain. We determined that the company was too siloed, with independent networks across divisions, across our truck and engine networks, and across our service partner's network. We needed to combine all three networks into one enterprise-wide network, then expand it globally.

After the evaluation, I concluded the job was too big for the 12 people comprising our corporate logistics group, and we could not tackle it internally.

It took about six months to put together what we called our five-year strategy, and pitch it to Navistar executives. Then we began an objective partner-selection process involving all the well-known 3PL players.

Q What were the top characteristics you were looking for in a partner?

A Prior to the 3PL selection process, we conducted a capability assessment of internal and external logistics operations, including what we thought our system encompassed and what we wanted it to eventually look like. There were 10 criteria, including planning, procuring, executing, compliance, culture, and program management. We used that assessment to score each candidate.

Q How did you determine the criteria?

A Previously, we created our own internal maturity levels as part of our logistics assessment. We measured our data points against theoretical metrics, not against the competition or anything else. We used that information to develop the criteria.

Q How did you present your needs to the 3PL provider candidates?

A We invited nine candidates to our office for a one-day presentation and had them all in the room at the same time. We explained how much

we wanted to save, and the capabilities we wanted to have at the end of the five-year plan. We asked them to come back in 30 days with a plan. We then held weekly conference calls to field questions, with all the providers on the phone at the same time so every 3PL worked with identical information.

Q That's an interesting dynamic. Was there any interplay among competing 3PLs? For example, did any of them question the capabilities of their competitors?

A No. During the phone calls, they asked clarifying questions of us. They weren't tipping their hand to their competitors on how they would make our project work.

Q Was that fall-off voluntary? Did any of the providers admit that they couldn't meet your needs?

A Yes, a few admitted they couldn't do what we needed. Remember, we asked them to address everything we wanted to accomplish across all Navistar's divisions, globally. A few providers dropped out because they didn't have that breadth or capability. A few others just weren't interested; they submitted canned presentations and weren't really listening to us.

We invited the remaining five providers to our offices separately to spend a day working directly with us. This gave us a chance to ask for clarification on their proposals and talk about specific approaches.

Q How did you choose Menlo?

A To make the final choice, we toured the finalists' facilities. Menlo took us to a 4PL operation it was running for security solutions company Diebold, which was going through a supply chain transformation. Then we toured its warehouse in Aurora, Ill.

Q What was the deciding factor in Menlo's favor?

A There were several factors, such as its global coverage, cross-network planning, and optimization capabilities. Menlo offered effective IT systems and solutions that complemented our environment. We appreciated its culture founded on Lean methodologies and focus on sharing best practices across the enterprise.

Ultimately, Menlo's experience and demonstrated success with Lean, and the culture fit with Navistar, gave it the edge. We felt we could build a team that would hit the ground running, and we did.

A $15-billion manufacturer of seven vehicle and engine brands, Navistar partnered with a third-party logistics provider to help achieve its globalization and supply chain goals.

Q What did you do after the 30 days were up and the 3PLs submitted their written proposals?

A We conducted our decision analysis by creating a graph comparing all the 3PLs' capabilities to our needs. At the end of the first round, four candidates fell out. That's when we learned that some of the 3PL finalists could not accomplish what they had pitched in writing.

Ultimately, we narrowed the candidates to two. Interestingly, out of the nine original candidates, Menlo was the only one with which we had no prior relationship.

Once we decided to partner with Menlo, we started to talk about the contract. Up to that point, we had not talked about price with any of the candidates.

Q That is fairly unusual. Most companies go into the partner-selection process with a rigid price structure.

A It *was* unusual. When I pitched our strategy to Navistar executives, they said, "We want you to get all of this capability. We also want you to save 25 percent of current supply chain costs, and you can't increase your staff. There will be no budget increase."

We went back to our five-year strategic plan, which is a unique approach in that it's a theoretical goal. Instead of targets, the plan consists of descriptors of what we want. We think of it as a strategic house that has 'rooms'–planning, sourcing, executing, invoicing and pay, performance monitoring, and compliance.

Having this plan helped us internally because our functional teams did not have to debate their approach. We painted a picture of where we were going, and aligned all the divisions to that. Then we could decide the right priorities and what to work on next.

We solicited input from every department–manufacturing, purchasing, supply chain, planning or ordering, logistics. Everybody was in the room to discuss the vision and strategy.

> "At the end of the 3PL partnership's second year, we will have achieved 11-percent cost savings toward our 25-percent five-year goal."
>
> –**Ed Melching,** Navistar

When it came time to talk price and contract structure with Menlo, we came up with a creative approach together: Our infrastructure improvements are funded out of the savings. Our 25-percent supply chain reduction has to be a net reduction after paying Menlo, and after putting an infrastructure in place. It's a significant challenge.

Q What happened next?

A We started to merge the two teams. The first hurdle was strategic alignment–getting the teams to agree on what we were going to do.

Q How did 'getting everybody in the same room' work?

A We held a two-day workshop, attended by 50 people from all Navistar business units and from Menlo, to review a draft of the plan with stakeholders. We communicated our intent, then broke into subgroups, each with a specific responsibility. We cleaned up the plan's vision and mission, and examined all the rooms of the house and its descriptors.

Q The process you have outlined is an unconventional approach. Would you say that your lack of logistics background gave you the freedom of not knowing what you shouldn't do?

A Because the project manager and I came from engineering, we had no ownership of the existing logistics system. For us, it was a simple approach; we just needed a blank piece of paper. It was okay for us to say that the existing system was not ideal and start working on something else.

Q Was there ever a time when you thought the project was too big?

A No. Although my team came from another world, it was one with billion-dollar, multi-year projects. We knew that rebuilding the supply chain was a journey; we didn't expect it to happen overnight. We were comfortable that if we built a plan, we could execute and tune it over multiple years.

Another interesting point: Navistar is primarily manufacturing-based. The leadership leaves logistics to the logistics team. They don't pick on us unless our numbers are bad. Overall, we had free reign.

It's important to clarify: when we selected Menlo, we chose a strategic partner. We were not outsourcing logistics.

Q What role did management buy-in play in getting your plan in place?

A When we were ready to choose our partner, we had to get approval from our executives, who had already approved the strategy. In the process, we realized the relationship with Menlo could encompass more than just transportation and logistics. So we put in place a daily/weekly governance process with the Navistar and Menlo teams.

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Q Was that your idea, or did it come from the top?

A That was our idea. In addition to that group, we have a steering team that includes me; Navistar's chief procurement officer, CIO, CFO, and senior manufacturing staff; and the vice presidents of manufacturing, parts, and service parts of other divisions. It also includes senior Menlo staff. This team meets monthly to gauge progress and get guidance.

Also, Navistar CEO Daniel Ustian felt that there were synergies between Con-way/Menlo and Navistar. So there is a third level of communication: Ustian meets quarterly with Con-way CEO Doug Stotlar to oversee our activities and discuss progress.

Q What specific programs and changes have been implemented since Navistar began working with Menlo?

A In 2010 alone, we identified and implemented 19 separate transformation or cost-saving projects, each attacking a specific area of the supply chain with a set of metrics that would define success. When we started the partnership, our most important accomplishment was defining our common vision and mission, and establishing a five-year strategy for what Navistar's supply chain would transform into, and how we would meet our cost reduction goals and support business growth. That was key.

Some noteworthy project successes so far have been rationalizing our transportation spend and adopting a new core carrier program; re-engineering our finished vehicle delivery process; implementing a new cross-enterprise transportation management platform; and successfully demonstrating a Lean material flow pilot project at one of our manufacturing plants.

At the end of the partnership's second year, we will have achieved 11-percent cost savings, out of the 25-percent goal we set for the next five years.

Q What are your future plans?

A We just gained approval for our Material Flow Strategy, which outlines how containers, packaging, and external logistics centers and warehouses will operate.

Q Suppose you get pulled off the supply chain initiative and put on another project? What would happen?

A We talk about that a lot. Our 2011 strategic house focuses on Navistar's organization and processes, because we want it to be sustainable. Part of our contract is that Navistar will be self-sustained at the end of the project. Our core competency will focus on analyzing and planning where we should be around the globe.

Our warehousing and transportation costs are greater than our direct labor costs. We're a heavy manufacturer and we actually spent more moving material than we did assembling vehicles.

Today, hundreds of people support our transportation and logistics efforts, compared to the 12 people we started with on our internal logistics staff. As we grow, we're only going to move more material–but we will be significantly more efficient and logistically scalable around the globe. ■

PROJECT UPDATE

Since *IL* conducted this interview in October 2010, Navistar and Menlo have continued improving the manufacturer's supply chain. Ed Melching provides this update on the past three months' efforts:

We are continuing to extend our Strategic Collaboration Model and Lean practices deeper into the supply chain to encompass more key suppliers and further support our manufacturing operations. In essence, we're applying Lean efficiency tools and waste-reduction methods across a bigger footprint of the Navistar enterprise.

As part of our Lean Material Flow project, we are implementing a standardized container solution for delivering parts to the plants. We have moved to a common solution with standard, reusable containers for transporting parts, providing both cost and environmental sustainability benefits. We will also shift our warehousing to align with our Lean Material Flow strategy.

Overall, we've been given the green light to bring collaborative change to more areas of the business. It's an exciting time to be in logistics at Navistar.

REVVING UP SERVICE PARTS LOGISTICS OPERATIONS

To boost efficiency and pave the road for global service parts logistics management, Ford is steering a 10-year plan to revamp its service parts network, processes, and technologies. Here is a peek under the hood of Ford's new "best-in-class plus" operation. ›

By Amy Roach Partridge

REVVING UP SERVICE PARTS LOGISTICS OPERATIONS

To say that Ford Motor Company's service parts supply chain is complex may be the understatement of the millennium. As one of the world's largest automakers, Ford boasts $118 billion in revenue and nearly 200,000 employees worldwide. Its U.S. service parts operation alone encompasses some 250,000 part numbers (which equates to about 1.5 million SKUs), approximately 1,500 suppliers, and 4,000 dealerships.

The service parts network serves a wide variety of customers–from tiny dealers in small towns to large wholesalers. It also includes a vast array of parts that differ in size, demand volume, and seasonality: from small parts such as spark plugs to large parts such as sheet metal, high-volume parts including filters, and slow-moving parts such as interior trim.

High service levels are crucial. If a U.S. dealer orders a fast-moving part from Ford by 4 p.m., the company targets delivery by 10 a.m. the next day for 98 percent of its shipments. It promises second-day service for bulk parts, and maintains high service-level commitments on parts for aging vehicles. In addition, Ford faces the same critical challenge that befalls every service parts organization: balancing between providing superior service levels to customers and minimizing procurement, logistics, and inventory expenses.

The company must also meet the service parts challenges associated with an increasing number of new vehicle launches. Ensuring replacement parts are available to dealers before a new model hits the market presents an obvious forecasting challenge. "We have to make an educated guess about where to put repair parts and how many to have," explains Ford Supply Chain Manager Michael J. Czach. "If that guess is wrong, it can be expensive. On the flip side, it is painful to a customer who gets into an accident if we don't have a tail light available."

So how does Ford tackle this complex beast of a supply chain? By carefully optimizing the technology, processes, and warehouse network design it uses to manage service parts logistics. Over the past 10 years, the automotive giant has undergone massive changes in these three areas to craft a service parts supply chain that is lean, fast, efficient, cost-effective, and, most importantly, lays the foundation for the firm's global supply chain vision.

To stock and manage the components of complex vehicle subassemblies, Ford used to operate a hub with eight depots across the United States. Today, 26 strategically located warehouses bring parts closer to customers.

STRATEGIC PLANNING

Before its restructuring, Ford utilized a fairly traditional warehouse network model for its service parts supply chain. One hub served eight facing depots spread across the country that delivered parts to area dealers. The hub sent parts to the depots based on a "pull" strategy–when a specific facility was at risk of dropping below safety stock levels on a certain part, the hub depot pulled the inventory and sent a shipment.

As a result of this strategy, Ford's eight facilities were performing a whopping 12,000 warehouse transfers daily, eating up valuable time and labor resources. Today, the company's service parts warehouse network looks vastly different.

After a lengthy optimization project, Ford now operates 26 smaller warehouses strategically located throughout the nation, allowing the company to be closer to its customers.

"We started by asking dealerships how frequently they needed deliveries," Czach explains. "Then we considered scenarios such as whether they need to be able to request an emergency order in the middle of the night and receive it first thing in the morning. We then built our physical network to be able to meet those various needs."

Another part of Ford's

network optimization strategy was to segregate different part types by volume, size, and frequency of use. It now operates 19 high-velocity centers that handle smaller, fast-moving parts for next-day delivery; and three buildings (located in Sacramento, Calif.; Memphis, and Detroit) dedicated to bulk parts for second-day delivery.

"We also maintain a facility in Michigan where we stock and manage slow-moving parts," adds Carrie Thompson, Ford's global program manager for service parts.

In addition, the company switched to a push deployment strategy for the majority of its volume.

"When we decided to increase our number of depots, we knew we'd have too many warehouse transfers with a pull strategy, so we had to switch to push deployment," Czach explains. "With push, the trigger is a receipt. Our enterprise resource planning (ERP) system creates a release to the supplier, the supplier ships the material in, and we push that material out across our network where it is needed, instead of putting parts away on the shelf and waiting for our buildings to hit a low stock point."

The company worried that switching to this higher-velocity push strategy would bog down the depots with a glut of inbound shipments, but those fears were allayed.

"We believed that as we increased velocity, inbound productivity would drop like a rock, but we found that is not true," Czach says.

This is partly because Ford shrunk its order sizes, shipping smaller quantities more frequently. As a result, the warehouse now generally receives only the two parts it needs, instead of getting five parts and putting three in reserve and two in a forward-pick location.

"We now operate a high-velocity network," Czach says. "We manage lead times tightly and push-deploy the majority of our material. As a result, we improved service commitments."

TECHNOLOGY LEADS THE WAY

Though the changes Ford made to its physical network and service parts strategies were extensive, the pivotal element of its service parts supply chain revamp is its new cutting-edge technology system: SAP's Service Parts Management (SPM) solution, which Ford helped develop, and has been implementing in phases since 2007. The ongoing project,

which began in 2001, is one of the largest IT projects in Ford's nearly 100-year history.

Although Ford's legacy technology system for service parts management, which some Ford facilities still use, was already considered best in class, it was an aging system that had become increasingly difficult and expensive for the company to maintain. The solution also included some deficiencies that were clouding Ford's vision of an end-to-end global supply chain.

The legacy system isn't set up to handle the multiple currencies that are a part of global commerce, explains Thompson, who joined Ford's SAP project team in 2004 and is now responsible for the SAP implementation strategy in both the U.S. and European service parts markets.

"We knew we didn't have a technology platform that could support our global vision," adds Czach. "Though we excel at service parts planning in the United States, our legacy system won't allow us to do the planning for our Asia Pacific or South American markets, for instance."

UNIQUE PARTNERSHIPS

But when Ford began searching for a system that would allow it to effectively manage service parts logistics and become the foundation for its global supply chain future, it came up empty. So the company decided to fill in the blanks.

"We began looking for a partner to help us design a new technology solution for service parts management, and we found Caterpillar Logistics was traveling down the same path," Thompson says. "Together, we searched for a technology provider that would partner with us to create a new system."

Ford and Caterpillar Logistics, a Morton, Ill.-based supply chain services and solutions provider, turned to SAP. The German-based technology giant had the manpower and financial resources necessary to invest in developing a new product, and its technology platform offered the global compatibility the two companies were seeking.

For its part, SAP knew that developing such a system would give it a competitive advantage in the complex world of service parts logistics technology.

"The motivation for developing this new solution was to service two great customers – and to be able to offer a service parts management product to the broader market," explains Stefan Neubig, vice president, customer operations for SAP America.

Today, nearly 200 customers utilize SAP's Service Parts Planning (SPP) solution (which offers packages tailored for seven different industries), justifying what Neubig defines as an investment in the "triple-digit millions."

Ford, Caterpillar Logistics, and SAP – along with Deloitte Consulting, in a systems integrator role – worked together on developing the new SPM solution, which includes two new engines, SPP and Extended Warehouse Management (eWM). The development phase continued for nearly four years before the two companies broke off into their own implementation phases. During the multi-year development process, both Ford and Caterpillar Logistics contributed greatly to SAP's understanding of the nuances of service parts logistics.

"Although SAP already had warehousing and inventory planning tools in place, the complexities and requirements for service parts were new to us," Neubig explains. "We relied on Ford and Caterpillar Logistics for that expertise."

LET THE IMPLEMENTATION BEGIN

Once the team felt it had a viable product, Ford started an 18-month implementation process in its European market, debuting the SPP solution there in mid-2007.

Ensuring dealerships maintain adequate replacement part inventory refl ects Ford's commitment to customer service.

KICKING THE TIRES:

Ford's Service Parts Technology Overhaul

THE PLAYERS: Ford Motor Company, Caterpillar Logistics, SAP, Deloitte Consulting, Westernacher

THE TECHNOLOGY: SAP's Service Parts Management (SPM) suite, which includes Service Parts Planning (SPP), Extended Warehouse Management (eWM), and Customer Relationship Management (CRM)

KEY CHALLENGES:

- Establish common global processes
- Replace an aging legacy system that did not allow for global growth
- Provide better integration and visibility across a global supply chain
- Improve forecasting, planning, and customer service metrics

IMPLEMENTATION BEST PRACTICES:

- Collaborated with SAP and Caterpillar Logistics to co-develop new technology product for service parts management
- Phased implementation to allow for system tweaks and to mitigate business risk
- Piloted SPP with limited number of parts and suppliers

OPERATION BENEFITS TO DATE:
(REFLECTS FULL IMPLEMENTATION OF SPP IN EUROPE ONLY)

- **20%** improvement in forecast accuracy
- **15%** reduction in service parts inventories
- **10%** reduction in obsolescence
- **10%** improvement in referral cost
- **.5%** increase in local fill rates

FINANCIAL AND STRATEGIC BENEFITS:

- Common platform for worldwide service parts management
- Real-time visibility to parts in global supply chain
- More accurate forecasting—particularly for seasonal and slow-moving parts
- Improved safety stock planning
- Improved collaboration with suppliers
- Improved service to dealers

—Source: SAP

"We agreed to implement the functionality first in Europe because its IT tools for service parts were not as mature as the legacy system operating in the United States," Thompson explains. "We knew we could reap the benefits faster in Europe.

"Because SPP was a new system and had not been proven at the volumes Ford handles, we made a lot of tweaks to the system's capabilities during its implementation," she adds.

Ford partnered with global consulting firm Westernacher for custom development to address these technical issues as it continued to fine-tune functionality and performance. Westernacher also provided key functional resources throughout the SPP and eWM implementations in Europe.

U.S. ROLLOUT

In 2009, when the European SPP implementation was finished, Ford began implementing eWM at its warehouse depots in Europe, and simultaneously started the U.S. rollout of SPP. (Later in 2011, the company will begin implementing a third SAP module to handle order processing, marketing, and customer interaction for service parts management in Europe.)

In the United States, Ford took a slightly different implementation approach. It first conducted a mini pilot to test the infrastructure and make sure SAP's system could talk to Ford's remaining legacy systems, then began launching SPP in 2010. Because of the U.S. market's size and scope, and the strength of the U.S. legacy technology systems, Ford decided to implement SPP functionality in two phases.

"Instead of a big-bang U.S. implementation, we began using the new SAP product to forecast and plan our parts. But we continued to back-feed the inventory plan into our legacy system to handle deployment and other downstream processes," Thompson notes.

Ford is currently able to plan 98 percent of its parts in SAP. Once the company reaches 100 percent, it will begin the second implementation phase, using SPP to manage parts deployment. The company plans to begin piloting this second phase in 2012.

As happens with all large technology projects, Ford faced some major hurdles while developing and implementing the SAP solution. For starters, the company had to commit significant personnel resources to the project.

"This type of technology requires an investment in people," Thompson explains. "We had to ensure our people can implement this system and maintain it going forward."

Another challenge that Ford will continue to face is integrating the various pieces of the SAP system with Ford's existing IT infrastructure–both in the United States and Europe, where implementations are already underway, and in the future as the company deploys SPM across the globe. With the head-spinning number of parts that accompany a global service parts operation, Thompson expects data integrity and synchronization challenges to continue cropping up.

But throughout the project, Ford's clear vision and executive commitment to overhauling its service parts supply chain has helped steer it through these challenges–as well as the near-death experience the entire auto industry endured during the 2008 recession.

"Because this was such a high-budget project, we fell under scrutiny, especially when cash flow was tight," Czach says. "But we had the commitment and the knowledge that our global vision was the endgame, and without this system, we couldn't achieve it."

The tremendous number of products required for a global service parts operation drove Ford to pursue better integration and visibility across its supply chain. Its goals included improving forecasting, planning, and customer service metrics.

BIG BENEFITS

Ford's hard work and vision is starting to pay off. It has achieved impressive preliminary benefits in Europe, where SPP has been fully implemented for 18 months, and eWM is live at one site in France and partially launched at a depot in England. (*See sidebar on page 148.*)

Ford reached these benefits faster than expected, but Thompson is quick to caution that the company does not expect similar achievements in the United States because of the capabilities of the existing IT infrastructure and business processes here.

"Benefits in each region will vary based on the baseline they start with," she explains. "Some tools and strategies that are mature in the United States were not in place when we launched in Europe.

"But, we have hit just the tip of the iceberg there," she adds. "As the team grows and better understands the system's capability, the numbers will likely increase."

BETTER THAN BEST

What has Ford gained with the new SAP system in the United States? Though the implementation is ongoing–the back-end launch of SPP is still to come, and eWM will begin rolling out in July 2011 with completion expected in 2013–Ford's U.S. service parts solution is on its way to being "best-in-class plus," says Czach. Here is a breakdown of expected benefits:

- **Forecasting:** Though Ford's legacy system already offered advanced forecasting tools such as automatic model selection, long-term forecast capabilities, and acceleration curves for new model parts, the new SAP system will improve automating these processes.
- **Inventory planning:** The big gain here is the ability to optimize combined safety stock and economic order quantity values. This new capability helps Ford better determine the optimum order quantity for each part in inventory.

"This comes into play with low-volume parts," Czach notes. "It ends up driving safety stock down on low-volume parts when we buy in large lot sizes."

■ **Distribution resource planning (DRP):** "We have a great DRP system, with future-dated orders and supplier shutdown logic, among other functionalities," Czach explains. "The one new thing SAP will give us is multiple short-date expediting options."

In other words, Ford's current system has only one process for expediting parts, while SAP will allow it to differentiate between suppliers' preferences on how, when, and how much inventory to expedite – a big gain for supplier relationship management.

■ **Parts deployment:** With the addition of SAP's automatic rounding algorithm, Ford will be able to better marry actual demand with packaging hierarchy logic.

Today, if a depot needs nine pieces, for example, Ford is likely to send a full 10-piece pack; when that depot only needs two pieces, it currently takes a lot of manual work to tell the system to send only those pieces instead of a full pack.

When demand for a part changes, the SAP system automatically rounds the actual quantity deployed up or down to match the parameters Ford sets.

■ **Procurement:** SAP supports all the current advantages Ford boasts in its legacy procurement module – such as advanced supplier EDI communication, inbound monitoring, and service fill and loss tools – but gives the company more flexibility around these capabilities.

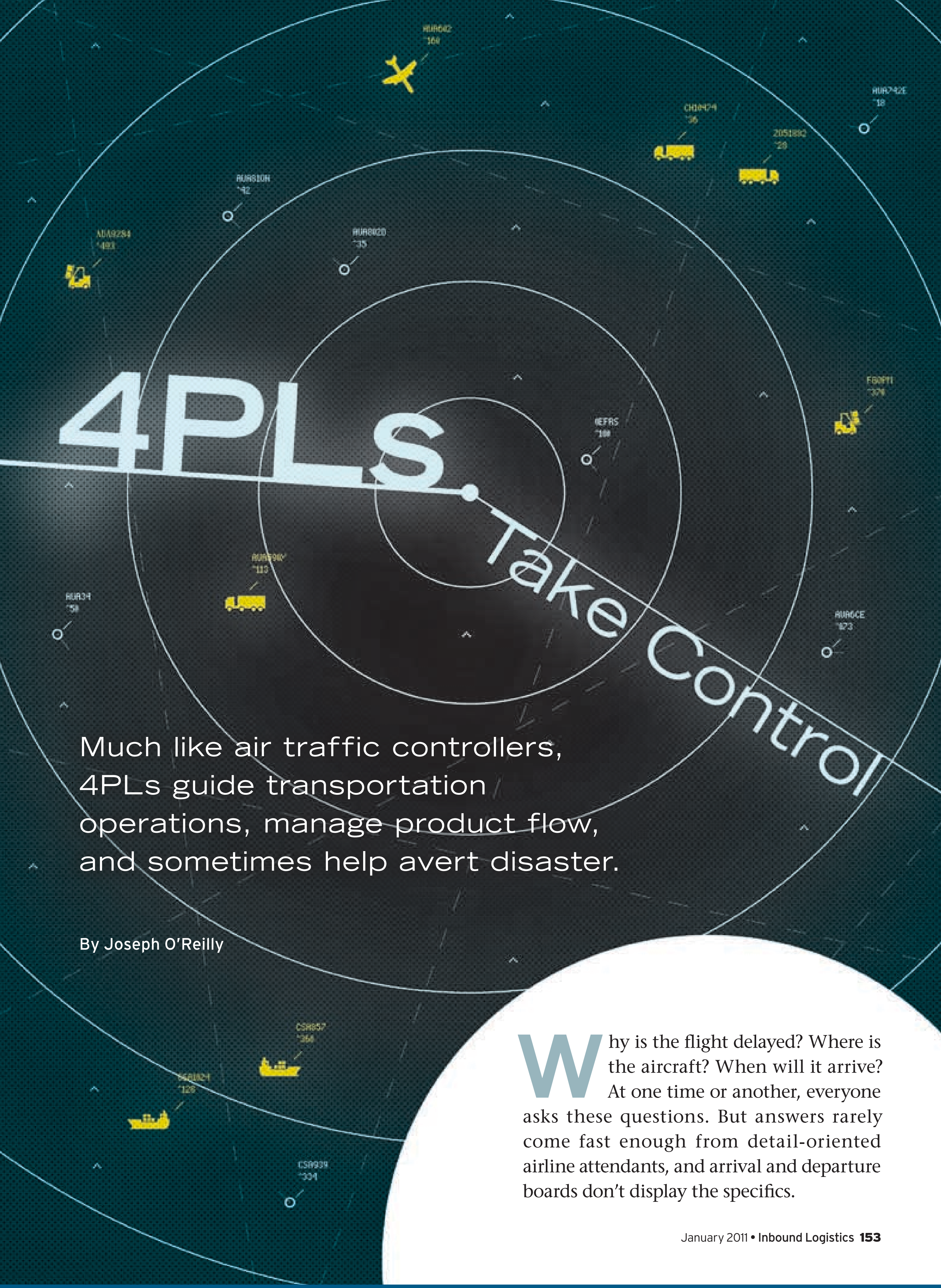
"When a procurement exception occurs, SAP will let us click on the alerts and drill down to the kind of detail needed to solve the problem," Czach explains. The SAP system will also automate daily analysis of procurement workflow.

"Overall," Czach says, "our technology was already best in class on a U.S. platform, but with SAP we will be best in class on a global platform."

FOCUS ON THE LONG TERM

As Ford continues to roll out SAP's different modules across the United States, then into additional regions around the world, the company will continue to focus on meeting its long-term goals. Transforming its service parts operation into a lean, mean end-to-end global supply chain machine remains a top priority throughout the company.

"We have a concrete vision for our global strategy," Czach says. "We evaluate the decisions we make each day to make sure they are moving us closer to that vision, every step of the way." ■

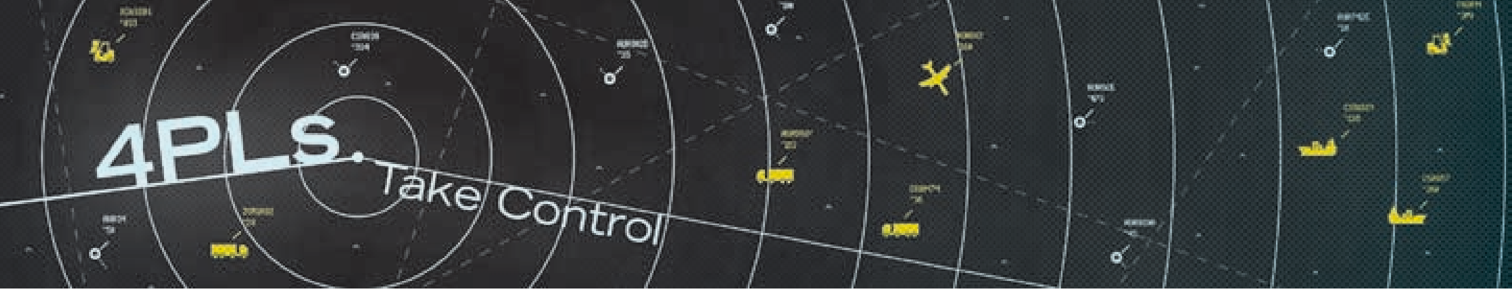


4PLs Take Control

Much like air traffic controllers, 4PLs guide transportation operations, manage product flow, and sometimes help avert disaster.

By Joseph O'Reilly

Why is the flight delayed? Where is the aircraft? When will it arrive? At one time or another, everyone asks these questions. But answers rarely come fast enough from detail-oriented airline attendants, and arrival and departure boards don't display the specifics.



3PL vs. LLP vs. 4PL

Learning the difference between a 3PL, LLP, and 4PL can be confusing. Here's a simple definition of each, according to Carl Fowler, senior director of operations and leader of Menlo Logistics' 4PL practice.

A **3PL** operates or manages a specific node of the supply chain, such as a warehouse.

An **LLP** executes and/or manages multiple nodes or networks.

A **4PL** sits on top of these networks and acts as the overarching entity. It identifies what nodes and networks should look like and who should manage them, then establishes the processes and governance for each supply chain node.

Above the fray, however, a wealth of real-time information crisscrosses the skies at mach speed. With sweeping panoramas of runways and airspace, and constant contact among airlines and airport authorities, air traffic controllers always know what's going on. They have visibility and communication. They have control.

Shippers and consignees often have similar questions and shared challenges trying to uncover answers deep within complex global networks. It's why some seek control-tower visibility by partnering with fourth-party logistics providers (4PLs) and lead logistics providers (LLPs) that can broadly glean and communicate data among myriad supply chain partners. (*See sidebar, left, for an explanation of the differences in provider types.*) The more they see, the better businesses can cope with exceptions, identify redundancies, create synergies, and communicate details to logistics operations on the ground.

THE 4PL EVOLUTION

If this distillation sounds over-simplified, consider how the 4PL concept evolved. In 1996, Accenture (then Andersen Consulting) divined the idea after consolidating, then managing, a multinational company's freight forwarder base. Strip away the marketing artifice of a neatly coined acronym and you're left with a supply chain contractor barking out assignments and looking for answers from a motley logistics crew. In theory, not much has changed during the past 15 years.

In practice, however, the idea of creating multi-tiered supply chain networks administered by one point of control is picking up pace. As best-of-breed outsourcing–in terms of transportation and logistics function, vertical specialization, technology sophistication, and geographic coverage–continues to grow and add layers of complexity to the extended value chain, visibility and accountability need to be centralized in a common nexus.

Among 1PLs (shippers), 2PLs (asset-based carriers), and 3PLs (functional service providers), 4PLs and LLPs are the newest débutantes at the supply chain party. They are sophisticated and Socratic, yet oddly plebeian as logistics service providers go.

Fourth-party logistics is an elite outsourcing capability that is shared by many a common 3PL. Nearly 75 percent of 3PLs provide lead logistics and 4PL capabilities, according to *Inbound Logistics*' 2010 *3PL Perspectives* market research report, which surveyed more than 300 service providers.

Outsourcing in general provides shippers with the means to gain better control of transportation and logistics operations and costs. As 3PLs seek to grow their value proposition, they are investing in technologies, services, and new locations to help take customers beyond tactical optimization to strategic business process improvement. They are taking the lead by chasing demand.

What makes the 4PL model so fluid is that the idea is in constant flux. Shippers want customized outsourcing solutions that float between non-asset-based objectivity and tactical execution. Demand is engineering how 3PLs, 4PLs, and LLPs continue to evolve in an overlapping triple-helix process of convergence and separation.

DISTILLING THE FOURTH ELEMENT

A number of factors inside and outside the enterprise make 4PL-managed networks effective. At the root, businesses want more authority over operational costs. Using a supply chain management strategy that targets silo optimization, without sacrificing end-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to-end visibility and control, presents an obvious advantage.

"A company's willingness to consider a 4PL arrangement is due to internal cost pressures and the strategic importance of logistics activities," says Dr. Juergen Rahtz, senior vice president, lead logistics solutions for Kuehne + Nagel, a Switzerland-based 3PL. "Internal pressures can include changes within the organization such as an acquisition, divestiture, new market or product introduction, and supply strategy and management."

MEETING MARKET DEMANDS

Apart from these corporate-driven impulses, market pressures such as fuel cost increases and capacity restrictions can trigger a similar need for 4PL partnerships. As a recent example, the recession presented ripe conditions for businesses to consider hierarchical outsourcing strategies capable of flexing with, and absorbing, market volatility. More specifically, companies needed a widespread agent that could effect positive change across the supply chain.

"Companies may have well-organized and optimized customer-facing distribution, but limited control over their inbound supply chains, potentially buying from suppliers on a landed cost basis, thereby missing opportunities to unbundle part price and logistics expense, for example," says Rahtz. "They can gain better control of the logistics spend and execution through a 4PL."

At the same time, decreased product life cycles and inventory carrying costs can also be supported through global direct-ship and build-to-order models that need very tight order and transportation management, using merge-in-transit and crossdocking to achieve reliable, short lead times.

A global 4PL or lead logistics provider allows companies to react faster to trade swings–and more quickly and efficiently than relying on a disparate band of service providers that are optimizing logistics functions in situ. The inevitable costs and inefficiencies of doing so without proper oversight are prohibitive.

As IBM's sole lead logistics provider, Geodis Wilson manages the company's global transportation and logistics operations.

"It takes talent and time to establish a proven network," explains Matt Lewis, director, global logistics for Armonk, N.Y.-based IBM. "When these two variables are not aligned to provide a response to a competitive opportunity, the 4PL model can be an excellent alternative."

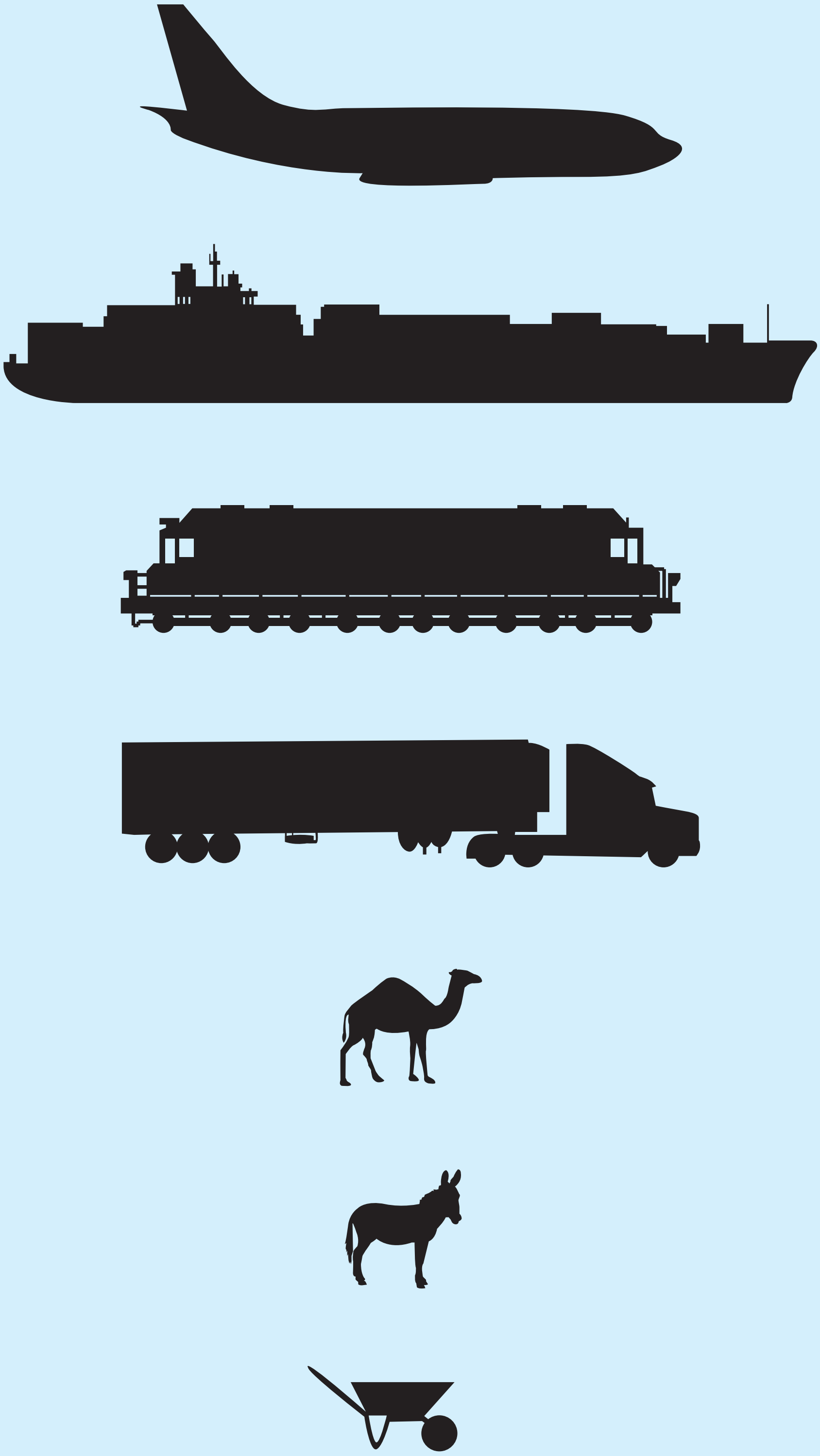
The technology and consulting firm knows this firsthand. In 2008, IBM divested its global logistics arm to Geodis Wilson. As part of the agreement, the French 3PL (with U.S. headquarters in Iselin, N.J.) became IBM's sole lead logistics provider, managing the company's worldwide asset recovery services, service parts logistics, and flow management of all hardware and software products. The strategic move was an effort to separate non-core transportation and logistics functions so that IBM could focus on its primary business.

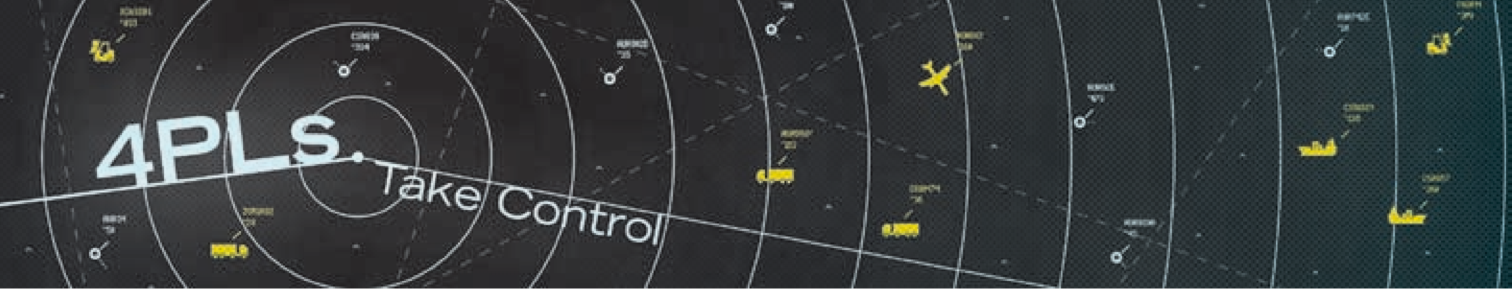
"The 4PL model is, at its core, variable and flexible, so it provides many C-suite executives with an alternative, especially when capital is tight," says Lewis. "IBM has developed a perspective that logistics is critical to our overall business success, but it should not be a strategic investment area for the company.

"Logistics is important in our demanding global supply chain; however, it is of significantly greater value to have a 4PL partner such as Geodis to provide the operational expertise and make the required investments," he adds. "This allows IBM to invest in its core businesses and let our logistics partner make the necessary outlay to keep its logistics capabilities world-class."

For some industries, the transition to a 4PL-managed outsourcing model has simply been a matter of time. Automotive, for example, has a legacy in regionalizing supply chain networks

(continues on page 160)





4 Steps to Making a 4PL Work for You

Companies look to fourth-party logistics (4PL) providers for a broad set of supply chain capabilities – from providing leading-edge technology and management expertise to unique specialization such as disposal of controlled materials. When it comes to high-level, value-added services, seamless integration without business disruption is key.

But how do you find the 4PL that's best for your organization? Joe Fantasia, Bob Boehm, Jim Harms, and Eugene Long, all directors in supply chain transformation for Deloitte Consulting, recommend following these four steps to get the outsourcing model right and help ensure a successful partnership.

STEP 1: Seek out providers specializing in your industry. Many providers don't have the expertise or resources to be all things to all companies. But you need a provider with knowledge of your business, products, processes, and markets from day one. Increasingly, 4PLs offer specializations that extend far beyond standard 3PL responsibilities of fulfillment, warehousing, and/or distribution activities.

For example, some highly specialized automotive 4PLs offer detailing and finalization of options as a standard part of their car delivery services. And logistics providers that serve the food industry are taking on other responsibilities, such as becoming ingredient and food suppliers.

Find a provider with functional specialization in your vertical and ask what high-value, cost-effective services it can offer to help improve your margins. Depending on your industry, keeping an open mind can help; in some sub sectors, distributors, group purchasing organizations, and even original equipment manufacturers are emerging as 4PLs.

STEP 2: Ask for true plug-and-play technology. Today, there's no reason to buy and implement your own supply chain systems. Ask a 4PL for more than the detailed traffic reports you may be accustomed to. True plug-and-play technology from 4PLs can support sophisticated planning and forecasting, inventory management, customer relationship management, and more.

A good 4PL can help you easily and seamlessly integrate plug-and-play software into your operational systems and processes, enabling your management to get its own extension team out of a provider that understands and acts on critical information – rather than simply reporting on it.

STEP 3: Make sure your provider can shift with market dynamics. As globalization continues to shape the competitive landscape, your provider must be able to change directions as quickly as your markets and individual customers do.

Further, you need a provider able to open up new markets and opportunities for you, as quickly as your company identifies them.

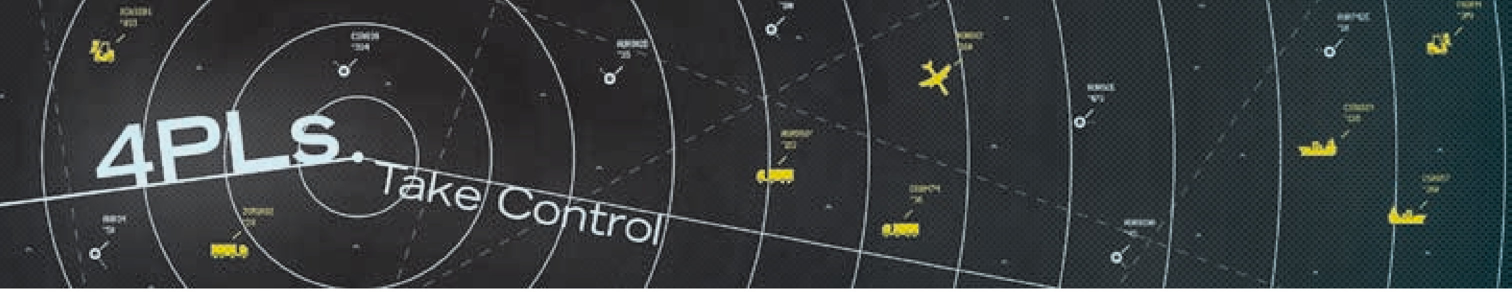
Your 4PL should be agile enough to move swiftly from low-cost offshore markets to near-shore sources and back again.

STEP 4: Look for a provider with demonstrated supply chain competence. Directing transportation well and running an efficient warehouse do not always indicate skill in managing an end-to-end logistics operation. Your provider should add value to your core business in a way that boosts margins.

Outsourcing companies that are most successful as 4PLs typically have a strong management team that commands credibility, possesses demonstrated experience, and has a proven record of delivering on service commitments.

Management competence is a two-way street. Evaluate potential providers against your own corporate culture to be sure they have a complementary operational mindset. Make sure your company has people dedicated to working with the provider to ensure seamless integration. Be sure you can manage your 4PL with metrics and program alignment to relinquish control of logistics to them.

And, have realistic expectations; you can't expect your provider to deliver both the lowest cost and premium service – find the right balance between the two.



(continued from page 156)

to more quickly source, manufacture, and assemble a wide array of moving parts just-in-time. Decentralization is a common strategy for locating resources closer to demand, thereby increasing responsiveness and time to market, and reducing transportation costs.

Over the past few years, supply chain localization has become a favored approach for consumer product industries as well, especially where demand sensitivity is a competitive differentiator.

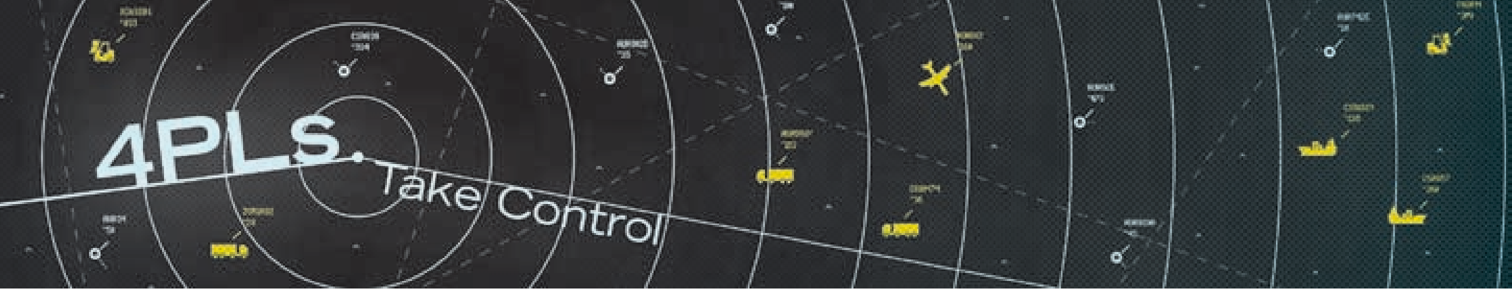
"Many large multinational companies are decentralized and operate on different ERP systems. Therefore, they have difficulty gaining supply chain efficiencies across the entire enterprise," explains Rahtz. "A 4PL can be the integrator for multiple business units and geographies, and be a change management agent."

WHAT RIGHT LOOKS LIKE

Locally or globally, technology integration and compliance can stimulate a change in how businesses organize supply chain networks. Some 3PLs have become de facto 4PLs because of their IT sophistication, serving up proprietary logistics solutions to other service providers who leverage these capabilities among their own shipping customers. Transportation management and freight brokerage are other areas where 3PL asset and expertise stratification has allowed for multi-tiered partnerships.

But even these instances offer only a small slice of what 4PLs are truly capable of. Many global 3PLs see the lead logistics role as an opportunity to help customers understand the value proposition of outsourcing by making functional improvement more strategic – by integrating logistics best practices across the supply chain.

"The 4PL establishes what 'right' looks like for any part of the supply chain," says Carl Fowler, senior director of operations, and leader of Menlo Logistics' 4PL practice in Fremont, Calif. "4PLs use analytical tools and processes to assess supply chain design and performance, identify disconnects, and define the optimum supply chain design based on changing economic,



4 Reasons Why You Might Need a 4PL

1. Higher order-to-delivery cycle times, and order-to-cash cycles that are increasing in length. Order-to-cash cycles affect other areas of the company and can be one big area where improvement can free up cash for important enterprise initiatives such as research and development.

2. The need and demand for IT resources. Lack of IT infrastructure to support an expanding global supply chain can inhibit growth. And in many companies, supply chain operations IT investment is a low priority.

3. Global growth, more inventory in more places, and a shifting revenue recognition point. Companies often lack the ability to generate substantive supply chain performance improvement on their own. There's lack of leverage in the supply chain.

4. Global expansion. Companies wanting to get into markets they have not been in before need flexible, effective supply chain processes to be successful. If you struggle with your supply chain in the United States, you will really struggle when you try to go global.

SOURCE: Carl Fowler, senior director of operations, and leader of Menlo Logistics' 4PL practice

IBM outsourced logistics operations, including warehousing, to a 4PL so it could focus on its core business.

market, and business conditions, and customer demand.

"The 'set it and forget it' methodology is a common trap companies fall into, whether it's a business line, region, or global," he continues. "As a 4PL, we first establish a true understanding of how the supply chain machine works, then find ways to lean it out and optimize it.

"Next, we put measures and controls in place so we can identify and understand when a problem is occurring. Once identified, we adjust or tweak the machine to return performance to optimum levels. This experience is true across all industries," Fowler says.

Put simply: the 3PL is the logistics engineer; the 4PL/LLP is the supply chain strategist; and in between, customer demand takes all parties in any number of directions.

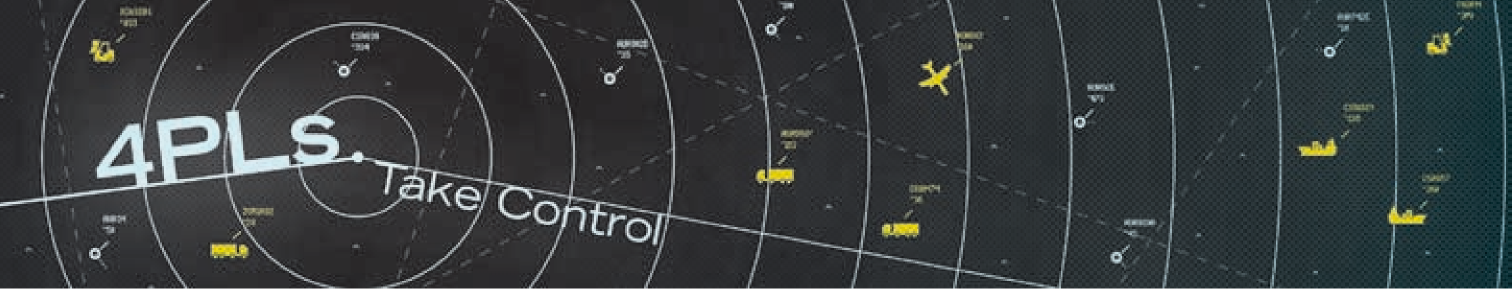
From its inception, the 4PL model was meant to control variability. There's no greater variable than globalization, and as a consequence, multinational businesses have been likely disciples of 4PL and LLP outsourcing strategies.

"For companies with a well-developed logistics organization and proven global processes that have maximized their value in terms of control and scale, the 4PL model provides an opportunity to expand that value by playing on a much larger field, and therefore providing greater economies of scale," says IBM's Lewis.

CENTRALIZED CONTROL

From an organizational perspective, it makes sense to have centralized strategic command over localized day-to-day operations. When you expand this business model globally and across multiple vertical organizations, a horizontal layer of control–driven by technology, geography, or corporate governance–is often compulsory. Different cultural dynamics around the world shade how businesses approach organizational hierarchy.

The 4PL idea has been more widely accepted and adopted in Europe and among global supply chain networks



> "Logistics is very important in our demanding supply chain. It is of significantly greater value, however, to have a 4PL partner provide operational expertise and make the required investments."
>
> –**Matt Lewis,** director of global logistics, IBM

than as a pure-play U.S. solution. Culture, politics, business practices, and geography are primary reasons for this divergence.

"From a cultural perspective, U.S. companies are less willing to give up control over carriers than European companies," says Rahtz. "In Asia, local companies are less agreeable to outsourced management services. They focus instead on transactional execution."

DIFFERENT DEFINITIONS

Europe and Asia have social structures that are far different than the United States, and these differences sometimes place their definitions of fourth-party logistics at odds.

"In Europe, a 4PL is typically defined as a manager of other service providers. Transportation management, for example, is often considered a 4PL activity," says Fowler. "In the United States, we view transportation management as a 3PL engagement that is less strategic and more tactical.

"The 4PL may operate parts of a supply chain, but its primary objective is to create and implement a comprehensive strategy based on the continuous flow of value and removal of waste in a supply chain," he continues.

Lewis agrees there are fundamental distinctions between U.S. and European perspectives, but believes the reason is less cultural and more operational.

"The development of pan-European logistics capabilities has been rapid and largely successful based on business and economic drivers rather than any type of social-driven requirement," he explains. "The complexity of cross-border logistics in Europe is the perfect microcosm for a global 4PL model, and that is why we see far greater readiness in Europe compared to the United States.

"This was the path of IBM's 4PL logistics evolution. We tested it in Europe for several years with Geodis, then took it to the global level once the proven capabilities were in place," adds Lewis.

Operating in multiple countries and managing a supply chain that needs to be much more global is a complicated proposition often not found in the United States. The 4PL concept is more acceptable in Europe because supply chains have to deal with inter-country trading. The European Union has helped standardized currency and Customs policy but there are still inconsistencies–taxation, infrastructure, logistics expertise, and leadership–among the 27 member states and countries outside the trading bloc.

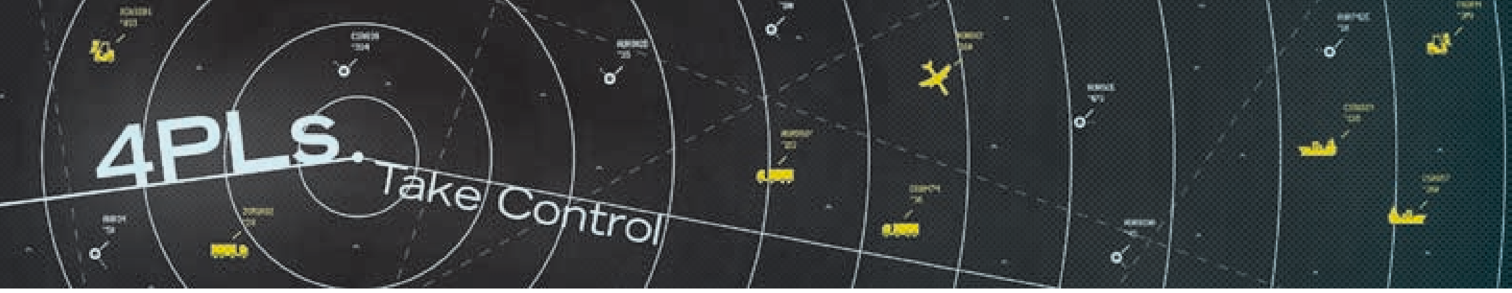
"If we look at overland-based supply chains, the U.S. market is much more homogenous than Europe, and the 4PL holds less value compared with the European distribution model," says Rahtz. "Most of our 4PL and LLP services growth occurs with global or multi-region supply chains."

For Fowler, the difference in the United States is mass and concentration. "The sheer flow through the supply chain is greater than other countries, so service providers have to support different types of supply chain dynamics," he says.

TUNING THE SUPPLY CHAIN

What's remarkable about the 4PL/LLP evolution is that wildfire anticipation and tepid acceptance created a supply chain legend long before it even came of age. As with just-in-time, the 4PL idea grew up as a rarified component of complex, parts-driven industries. It had its merit. Beyond these instances, however, it was viewed as yet another layer of unnecessary bureaucracy. That opinion is swiftly changing–about as quickly as outsourcing companies redefine 4PL and LLP expectations.

Equally significant, these managed supply chain arrangements vary widely.



Outsourcing warehousing, transportation, and other logistics functions to global 4PLs allows shippers to benefit from the providers' experience, technology assets, and established best practices.

Outsourcers and 3PLs alike are creative in how they spin and execute the concept. This fluidity is appealing to some; to others it is hard to grasp.

For example, Kuehne + Nagel's lead logistics service portfolio covers three different areas at the two boundaries of outsourcing: on one end, it provides integrated managed services as a 3PL and managed services as an LLP; and, on the other, neutral 4PL services that do not include any 3PL activities.

"What makes it hard to grasp is that there are models in between where customers are looking for an integrated LLP, but also want to keep certain 3PLs or carriers and have those managed in a neutral model," says Rahtz. "The advantage of this flexibility is that a 4PL/LLP can provide a customized solution that fits specific customer needs and can accommodate cultural or regional differences."

4PL-managed outsourcing isn't for every company. But for consumer-facing businesses sensitive to shifts in consumption, and where supply chain decentralization has become a preferred strategy for pulling product to demand and reducing total logistics costs, the 4PL is the logistics model of the future.

"No matter how demand-driven an industry is, a 4PL partnership can help companies better understand, respond to, manage, and measure challenges and changes–then adjust to keep their supply chain in tune by eliminating waste, reducing costs, and operating at the optimum level necessary for the business," says Fowler. "The 4PL is the conductor of the orchestra, making sure that all the instruments are playing along to the same song sheet."

Keeping the supply chain in tune is a shared objective at IBM. "Our 4PL model is analogous to a symphony conductor," notes Lewis. "Geodis stands at the global podium and orchestrates function across all the various logistics service providers in a way that balances customer and supply chain requirements and results in satisfied clients and repeat business for IBM."

However industry or media attempts to spin the 4PL model, there's no getting around the fact that logistics service providers of all sizes are playing to a growing audience. Precision and harmony go hand-in-hand with visibility and control.

In time, there will be different flight patterns for global outsourcing and new entrants will shake up the establishment. But receptive shippers will always expect another encore from their 4PLs. ■

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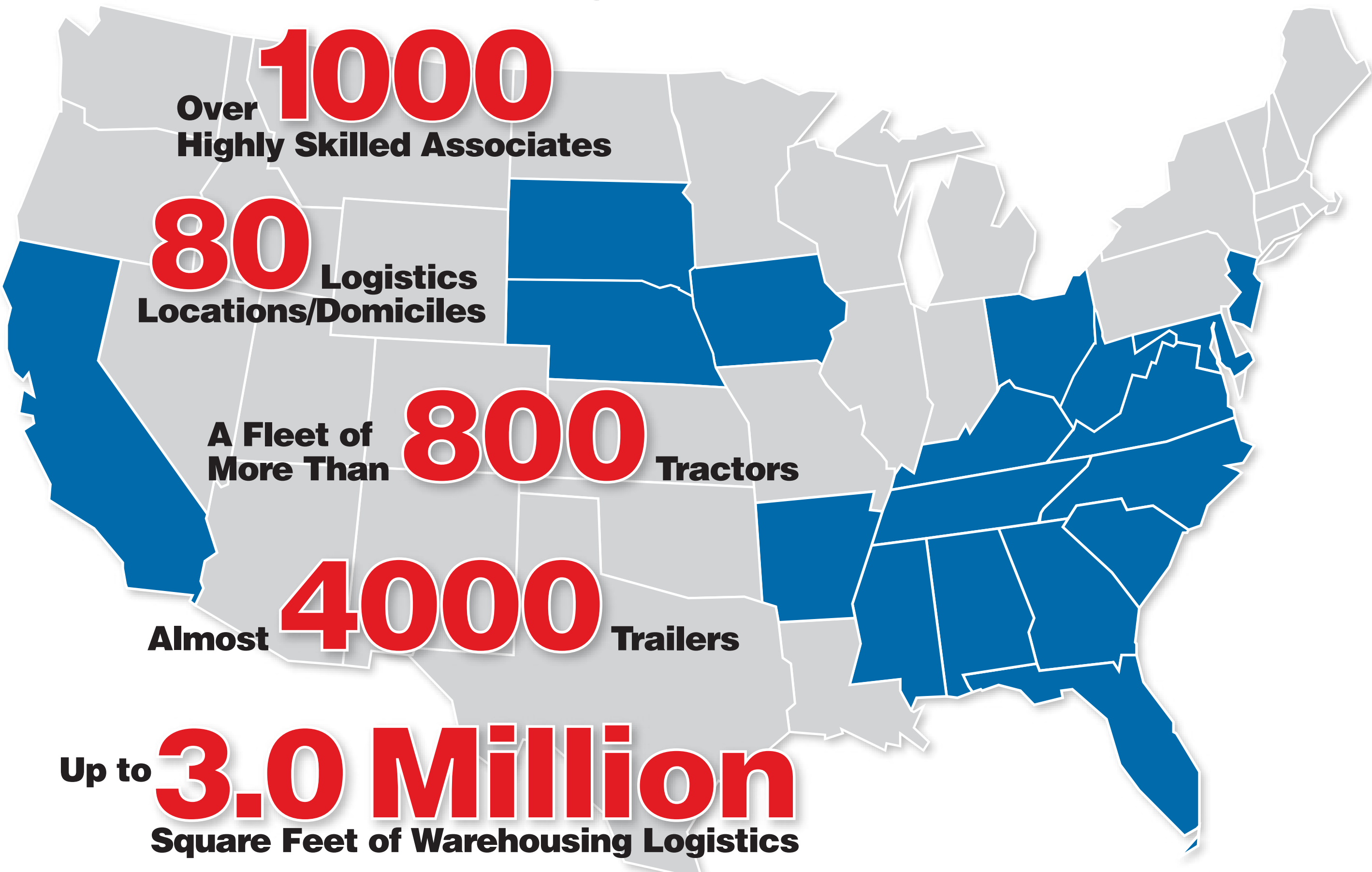

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Selecting and Managing Freight Forwarders

YOU'RE IN CHARGE

Effectively managing your freight forwarders helps improve supply chain compliance.

by Mark Parker

At risk of compliance failures in their physical supply chains, many U.S. exporters and importers complain about their inability to manage freight forwarders and customs brokers effectively. But they have more ability–and responsibility–than they think.

Regulatory changes have made accurately recording and maintaining trade-related data a compliance requirement. While data input has been more or less automated, thereby minimizing paperwork and easing access to information, this "upgrade" also brings a higher visibility of errors to the regulators, increased fees and penalties, and a heavier responsibility load for the trade community. Compliance problems arise from a lack of awareness and insufficient training on requirements.

In the current economy, in which many companies are struggling to grasp regulations and keep up with requirements, there is a tendency to place the onus on freight forwarders, making them responsible for classification, reporting, accuracy, and recordkeeping. This is not a recommended approach, especially for U.S.-based businesses.

Forwarders rely on information provided by the exporter. Though they have written authorization to represent a business, forwarders typically expect the exporter to provide accurate information. Furthermore, regulators will hold the exporter responsible, not the forwarder, if the information is incorrect. A forwarder's primary role is to arrange and manage the transportation of goods; they should not be expected to serve as a company's compliance personnel.

Even in this economy, do not let cheap rates and low logistics costs wrongly influence your choice of freight forwarder. You get what you pay for.

CHOOSING A FREIGHT FORWARDER

You must first choose a freight forwarder before you can manage one. Even in this economy, do not let cheap rates and low logistics costs wrongly influence that choice. The old adage rings true: you get what you pay for. Selecting the best forwarder for your business is critical to smooth supply chain operations.

At the beginning of the freight forwarder selection process, it is wise to create a requirements list. The freight forwarder must have knowledge of and experience in your product, desired shipment method, and destination country. The freight forwarder's staff must be trained in U.S. Department of State and Department of Commerce (including Census Bureau) documentation, recordkeeping, reporting, and licensing requirements.

The freight forwarder must also demonstrate willingness and the capability to communicate regular status updates and problems, and maintain records on export transactions, including the depletion of licenses in order to provide comparative internal audits.

Other important requirements are Customs-Trade Partnership Against Terrorism (C-TPAT) certification, authorization to file electronic export information and shipper export declaration (SED) and submit the shipper's reports via the U.S. Automated Export System (AES) for filing SEDs electronically, and full internal quality controls.

Depending on the business requirements, companies should keep their forwarder relationships to a manageable number. In general, you should choose no more than two or three freight forwarders, as managing multiple forwarders requires more manpower and can ultimately create more problems than it solves.

Put in place a power of attorney (POA) with each authorized forwarder, clearly defining its role and responsibilities in your supply chain. And while there are certainly times when a company must grant limited authority to other agents, this should be a rare exception–never the rule.

Your evaluation process should also include meeting with each potential forwarder's operational staff so you can gauge their capabilities. Don't let the forwarder's account representative keep you from interfacing with operational staff during the evaluation process.

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A MISSION TO MANAGE

After you have selected a forwarder, your challenge and responsibility becomes managing the service effectively. The following forwarder management activities are all critical to maintaining best-practice standards. Give them high priority.

■ **Establish and maintain clear communication guidelines.** Creating and maintaining an open dialog with your freight forwarder is vital. You should discuss and document needs and expectations up front. Provide detailed documentation to support any potential staff turnover that may occur. Hold regular conference calls or face-to-face meetings to discuss problems and identify solutions that will improve compliance and shorten timelines. Keep metrics of your shipping activity to monitor progress and problems–both yours and the forwarder's.

It is essential to have a reporting structure for any potential non-compliance issues or government inquiries relative to the transaction. This may seem like a lot of work, but your compliance department will function more smoothly, and you will have better control of your shipping activity.

■ **Be sure the communication process includes prior notification of shipments.** For exports, use a Shipper's Letter of Instruction or its equivalent to ensure that shipment details are communicated clearly and accurately. Many mistakes occur because a forwarder has insufficient or inaccurate shipment information.

In addition to the required logistic information, such as weights and dimensions, export-related documents should include compliance

information such as Classification, License Authorization, and AES Internal Transaction Number. For imports, require that forwarders notify you of all incoming shipments. This allows time for verifying shipment details, such as consignee and correct harmonized tariff schedule classification, and ensuring supporting documents are provided.

■ **Get a complete copy of the transaction.** A common complaint from exporters and importers is that they are unable to get a copy of their shipping records. Establishing communication guidelines makes this much easier. A checklist of required documents will help ensure that the entire transaction has been received. Giving a copy of the checklist to the forwarder can help limit the number of requests.

■ **Audit documents after receiving them.** The audit doesn't have to be complete, but your compliance department should establish a threshold to maintain a good compliance rating. In general, you should conduct a weekly audit for a smaller threshold and a quarterly audit for a larger threshold. If you find errors, you can correct them as soon as possible to limit potential penalties and fines. As you find and correct errors, research each occurrence so that the problem is solved for future shipments.

■ **Maintain strict controls on AES filings.** To avoid mistakes, it's best for the exporter to directly file AES. Mistakes are less likely to occur when you have more control over your shipment documentation; you'll also spend less time managing your forwarder.

If you opt to have the forwarder file AES, put strict controls in place. Your best defense is to outline clear Service Level Agreements. If possible, get a copy of the transaction before it is submitted. Changes to the AES record will result in a compliance alert message to the filer, meaning your shipment violates export reporting requirements. If a filer consistently receives compliance alerts, the business practices that led to them must be identified and corrected. The filer will otherwise be subject to delays, fines, and/or penalties.

■ **Know your responsibility in the transaction.** Too often, companies are identified as exporter of record without their knowledge. Regardless of terms of sale, under the various U.S. export regulations, all parties remain liable for compliance.

It is essential to know your responsibility and participation in the transaction. Just because the export is Ex-Works, do not assume that you are not the U.S. Principal Party in Interest (USPPI) or the exporter of record. Often, if the goods are leaving your dock, you are involved with the AES record.

Under the Foreign Trade Statistics Regulations, the USPPI or its agent is responsible for ensuring the AES records are properly filed. The U.S. Bureau of the Census identifies what information the USPPI and forwarder must provide.

The USPPI is responsible for coordinating with the forwarder and ensuring that all records are filed and all information is accurate. Exceptions are "routed transactions," where the forwarder acts on behalf of a party other than the USPPI. In these cases, the U.S. Bureau of the Census has defined which party is responsible for certain information.

■ **Make compliance your business.** You know your transactions better than anyone. A freight forwarder will never be able to effectively run your compliance program, and you cannot outsource liability. The onus is always on the exporter and importer. When a government agency comes knocking, very little blame for violations can be laid on the forwarder.

The more control you give up, the more likely you are to increase regulatory noncompliance risk. With the exception of AES, companies should control their own jurisdiction determinations, classifications (both Schedule B and HTS), license determination, license authorization, and screening.


We bring it
all to the table.

■ **Qualify your own transactions.** Don't let forwarders qualify your transactions for preferential trade agreements. Often, improperly trained shipping personnel are responsible for filling out the certificates of origin. Only the trained personnel in your company's compliance department should perform the cumbersome, detailed qualification process.

■ **Limit POAs, written authorization, or signed authorization granted to agents.** The more POAs and authorizations you give forwarders, the harder they are to manage. Many companies – both importers and exporters – aren't even sure how many authorizations they have granted, and therefore are unable to manage their forwarders.

Importers who have granted POAs to several customs brokers discover that shipments clear Customs without their knowledge; the freight just arrives. No import documentation is provided, making it nearly impossible to audit the transaction. Are qualified experts performing the classification? Do you audit for accuracy? Are you overpaying duty or, worse, underpaying? Do you have all the documents required for a complete transaction file?

A proactive approach will limit your errors – which will cut the time you spend correcting them and reduce the likelihood of penalties and fines.

These are just a few common problems experienced when you lose visibility into your supply chain and control over your brokers. Limiting authorizations limits errors – and, just as important, your workload.

■ **Keep talking.** It's important to keep your forwarder aware of new regulation enforcement and new technology development. When an open dialog is maintained, you can more readily share, plan, and act upon information. A proactive approach will limit your errors – which will limit the time you spend correcting them and reduce the likelihood of penalties and fines.

THE COMPLIANCE DRIVER'S SEAT

None of this is to say that forwarders are free from liability; just the opposite is true. In August 2009, after a five-year government investigation, a global freight forwarder reached a $9-million settlement agreement with the U.S. Bureau of Industry and Security (BIS) and U.S. Department of Treasury's Office of Foreign Assets Control in a case involving hundreds of shipments to Iran, Sudan, and Syria, and a failure to adhere to government recordkeeping requirements.

BIS has published a helpful guideline on the forwarder's responsibility within any given transaction. Forwarders are still subject to criminal prosecution and penalties for violations of U.S. trade regulations, such as Export Administration Regulations and International Traffic in Arms Regulations. And, they are still responsible for knowing their customer and being aware of red flags that may appear in a transaction.

But ultimately, the importer or exporter is responsible. It's much harder to avoid an accident if you are a passenger instead of the driver. To effectively manage your freight forwarders and brokers, be the driver in your compliance department. Be an active participant in your account. Know the regulatory requirements. When you take control, the ever-changing and evolving compliance world – including freight forwarders – becomes much more manageable.

Mark Parker is a consultant for the Trade Management Consulting team at J.P. Morgan. 512-743-7937. mark.p.parker@jpmchase.com

SORTING THROUGH MATERIALS HANDLING DECISIONS

What happens in the warehouse no longer stays in the warehouse. Today, optimizing materials handling equipment and processes inside the four walls starts at the top, and impacts the entire supply chain.

By Perry A. Trunick

Supply chain network design. Optimization. Alternative sourcing. How procurement works with physical distribution. The impact of multiple facilities on inventory. Consolidation strategies. These factors, and many more, affect distribution center operations. Optimizing inside the four walls may start far up the supply chain.

For example, once you know where your distribution centers will be located, you want to ensure you have the right amount of inventory in the right place to achieve proper service levels. "Effective network optimization can save up to 15 percent of facility and transportation costs," says Paul Evanko, senior vice president of St. Onge Company, a supply chain consulting firm based in York, Pa. "Include inventory optimization, and you can save another five to 15 percent."

Even packaging comes into play when making materials handling decisions. Increase your products' value density and you can add another three to 30 percent in savings, depending on product value. Consider Hewlett-Packard (HP). When it redesigned packaging for a notebook computer, it reduced the product's weight by eight percent and increased the number of cases per pallet by 25 percent.

BOTTOMS UP

Starting at the piece level, then working up to the layer and pallet levels to optimize each element of materials handling, can result in better stacking, less overhang, and less damage. It also opens up some options, such as the ability to use machine loading rather than hand-stacking.

It's a quick descent from 10,000 feet to ground level. Decisions on where to source, or how many facilities to operate and where to locate them, play into the facilities' basic operations and demands on their systems and processes.

For example, HP's packaging change could add layers to a pallet, altering its storage and handling characteristics. Less pallet overhang might allow for the use of automated storage solutions, which had previously posed too much risk of damage. Storage location configuration may also need to change to accommodate larger, heavier pallet loads as more items are added to each pallet.

Kenco has developed – and adheres to – a series of materials handling best practices for its warehouses. It uses these standards as a baseline process for benchmarking performance.

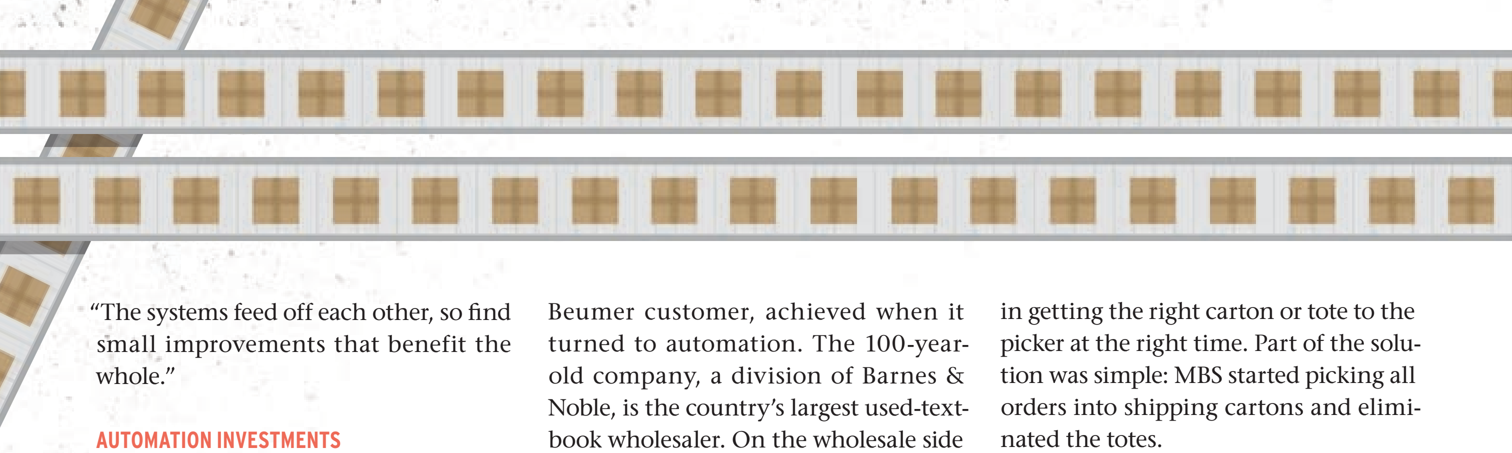
Similar materials handling changes might come into play on the outbound dock. More efficient trailer utilization can be a plus, but more product in the same trailer can spell higher transportation costs as a result of the shipment's added weight and value, and greater risk in the event of a loss. And, the denser pallet load is bound to affect receiving, storage, and picking operations at the next stage in the supply chain.

Small changes can add up to major savings – or major headaches. If you want to shave a few seconds off picking operations, for instance, it's important to look upstream and down in the process. "The last thing you want to do is improve step one and, as a result, steps two and three can't handle the load," notes Nathan Beene, director, logistics engineering for Kenco Logistic Services, a Chattanooga, Tenn.-based third-party logistics provider.

UNCLOGGING BOTTLENECKS

Companies usually consider automating their distribution facilities to address bottlenecks. "If you want to improve a bottlenecked process, you need to evaluate the process that leads up to it; don't starve the bottleneck," explains Beene. "If a conveyor upgrade can improve takeaway in the picking area, then look at the picking operation.

"If you can only get things to the line at a certain rate, that's all the automation will be capable of doing," he adds.



"The systems feed off each other, so find small improvements that benefit the whole."

AUTOMATION INVESTMENTS

What's the true value of your investment in automation? Productivity gains, flexibility, throughput, accuracy, and increased service levels all count when considering what investments today will support near-term gains and drive long-term performance.

"You also need to shift your focus from total cost of ownership, a common way to evaluate a capital investment, to total value of ownership," says Tony Barr, vice president of marketing and business development for Beumer Corporation, a materials handling firm providing conveying, loading, palletizing, packaging, sortation, and distribution systems.

Under the total-cost approach, productivity and throughput are considered part of the structural improvements an automation project can deliver. Then add flexibility, accuracy, and service levels, which support volume growth and margin expansion. These improvements can shorten the time frame for return on investment (ROI) and enable growth, according to Barr.

Productivity gains typically result in picking and packing labor reductions, which is commonly a major consideration in cost justification/ROI. "But a second consideration is often throughput – do more with less, maximize volume, and minimize time," adds John Sarinick, vice president, Beumer Corp.

Space can also be an issue. Automation can help expand an existing facility's serviceability; it can also provide flexibility. "Use sortation to allow areas in the DC to have multiple uses," Sarinick recommends.

Another benefit of automating your distribution center can be improved accuracy – on-time and correctly filled orders – and enhanced customer service levels.

That's the result MBS Textbooks, a Beumer customer, achieved when it turned to automation. The 100-year-old company, a division of Barnes & Noble, is the country's largest used-textbook wholesaler. On the wholesale side of its business are campus bookstores; on the retail side, MBS is expanding into direct-to-consumer sales. A third element of its business is bookstore management systems, such as point-of-sale and inventory management.

MBS operates one 350,000-square-foot distribution center in the only home the company has known – Columbia, Mo. The facility receives 2,500 to 3,000 packages per day, and ships 3,000 cartons daily. It holds 120,000 titles in stock at any given time, and serves a 2,600-bookstore customer base.

One problem MBS faced when managing the rapid growth of direct-to-consumer sales was that the business didn't fit the traditional wholesale fulfillment process. The retail portion (direct-to-consumer) was automated in 2000, and expanded again in 2003 to handle 1,300 orders in a dynamic batch fashion. The company undertook a third automation project in 2007 to keep up with retail segment growth. Over the past 10 years, this business has grown 300 percent.

"We needed flexibility, accuracy, and the ability to streamline internal processes," says Mike Pitt, director of automation for MBS Textbooks.

Wholesale orders were being picked into shipping cartons, while retail orders were picked into two different colored totes. This presented a challenge in getting the right carton or tote to the picker at the right time. Part of the solution was simple: MBS started picking all orders into shipping cartons and eliminated the totes.

Cartons that contain wholesale orders proceed to a sortation line, where they can be automatically taped shut. Retail orders are removed from the carton that carries them through the sortation process, and the carton returns through the system to be loaded again with either a wholesale or retail order.

MBS sized the system to handle 20,000 items per hour and 450 processing destinations. All outbound processing destinations look alike, allowing them to process either wholesale or retail orders.

"One order can be sent to multiple processing destinations or multiple orders can be sent to one processing destination," says Pitt. This limited the size of equipment MBS needed to purchase, he notes, and allows for future expansion. Picking to a static batch and eliminating some processes (and the number of times a product was touched) boosted productivity by 35 percent.

APPLYING MANUFACTURING PRINCIPLES

Shekar Natarajan, director of supply chain operations for The Pepsi Bottling Group Inc., sees a trend toward extending manufacturing principles and efficiencies from the way a company builds its product to the way it builds orders.

"Take the work back to where it

(continues on page 186)

When considering materials handling automation, look at productivity and throughput gains; then add flexibility, accuracy, and service levels.

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MATERIALS HANDLING INNOVATION IN ACTION:

CRUZE CONTROL

Optimized materials handling operations and tight inbound control keep Chevy Cruze production lines moving, despite GM's stringent quality standards that demand error tolerances smaller than the diameter of a human hair.

General Motors' introduction of the Chevy Cruze to North America got the auto industry talking. It also created a lot of buzz in Lordstown, Ohio, where its predecessor, the Cobalt, had been assembled. The region worked hard to attract the Cruze to the Lordstown plant. Once GM came on board, the transition pace picked up dramatically.

The Cruze represented more than just a model changeover for Comprehensive Logistics Inc. (CLI), a third-party logistics provider of warehousing, distribution, and transportation management services based in Youngstown, Ohio. It is the third GM vehicle CLI has supported at the Lordstown facility in a decade.

CLI, which provides both contract manufacturing and third-party logistics services to the GM plant, was called on to play additional roles as GM consolidated its suppliers. The value-add contract manufacturing segment—representing about 140,000 square feet of a total one million square feet of space in four facilities—started operating three shifts almost immediately.

GM's Cruze had established a strong market presence in Europe and Asia, which made sourcing some parts and components a challenge for the inbound supply chain because suppliers were busy producing to meet demand in those markets.

QUICK CHANGE ARTISTS

Planning for the change started well in advance of the last Cobalt rolling off the line, and it wasn't long before the first Cruze left the plant. The changeover happened quickly. CLI started putting together its Cruze lines in December 2009 while the Cobalt was still running at the GM plant. It supported the Cobalt until June 2010 when the Lordstown plant started producing Cruze models. It soon ramped up to about 1,000 vehicles per day.

"It all starts in receiving," says Steve Olender, CLI's vice president of information technology. CLI receives all its information through the same proprietary system, which executes a plan for every part. CLI handles crossdocking, deconsolidation, sequencing, subassembly, repacking, and bulk parts storage for the Lordstown Cruze assembly plant, and it delivers just-in-time.

Because some components are sourced internationally, CLI also receives and strips more than 30 ocean containers daily, although volumes vary. While GM handles sourcing, CLI receives advance ship notices on supplier shipments, as well as broadcasts from GM on what it is building and which parts and subassemblies it needs.

If a part needs to go directly to the GM assembly plant to be built into a subassembly, that's what the destination routing will read. "The part can be loaded onto an outbound truck for delivery in the specified time window as soon as it is scanned in receiving, and a lot label is applied, then rescanned for routing directions," explains Olender.

In receiving, all items are scanned using an Intermec Windows Mobile 6.1-based device. The operator scans the supplier part label, and a portable printer generates the appropriate lot label while the operator receives destination routing instructions.

"Lot control is important," says Olender, "because CLI needs to ship the parts in first-in, first-out order. In addition, a particular part might need to be inspected prior to being delivered to the assembly plant."

An outside firm handles inspections when required. Parts needing inspection are routed to the contractor when they arrive in receiving. Otherwise, they move either into storage, to the CLI assembly line, or directly to the GM line. "The goal is to deliver only 100-percent certified parts lineside," says Olender.

How well is the system working? "We operated 54 weeks without a mistake," Olender notes.

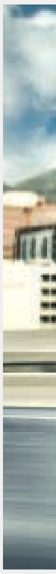
QUALITY DOWN THE LINE

Quality doesn't stop with receiving the right part at the right time and delivering it to the right destination in storage or in the plant. Once the supplier serial number is scanned and associated with the lot number, it is traceable throughout the process.

Processes are also engineered, measured, and recorded. For instance, the torque values are set and recorded so that they are associated with a particular assembly. This, in turn, is linked to the vehicle identification number (VIN) in the build order so that essentially every part, its supplier, and each process and person associated with building that vehicle is part of the car's pedigree.

Inside CLI, checks and balances ensure compliance. The headliner assembly area hosts 13 stations, 15 workers, and four robots. Headliners have 48 variations each for the U.S. and Canadian markets. A pick-to-light system directs an operator to the next headliner to be selected. When the operator picks up the component, the act of breaking a light beam indicates to the system the item has been picked.

Vision systems on the line and associated with the robots check 33 critical areas for location, presence, and orientation as the subassembly progresses through manufacturing and when it is ready to leave the line.



The system won't allow the operator to pick from the wrong lot or wrong location. It can be set up to allow the operator to make a correction or initiate a hard stop, which would then require a supervisor override to continue. Either way, error corrections are closely watched and root causes examined.

Portable label printers help reduce errors in receiving. The inbound parts are scanned against the advance ship notice or receiving documentation, and a label is printed and applied before the operator moves to the next item.

"If it weren't done that way, the operator might go down one side, scan the items, then go back to a printer and retrieve a strip of labels and stick them on," says Olender. "This could allow errors, so the process is designed to minimize the risk of a mistake."

Some larger assemblies move in specialized containers. They are loaded in reverse sequence, so CLI needs to receive the last sequence for the rack before starting to build the subassembly. Containers have bar-coded identities and include identification for each slot on the container. Parts and assemblies are scanned and placed into a slot that has been scanned for confirmation.

A similar process occurs at the outbound dock door, and trucks bound for the customer assembly plant can't leave with an open order. An open order condition can exist if a container is put into a different trailer, even if it is bound for the same destination.

"Two trucks leaving at the same time might encounter traffic, causing the second truck to arrive first," Olender says. "As added protection against containers moving out of sequence, orders are kept together."

VEHICLE TRACKING

The truck operations controls are similar to a passenger airport. The systems track what vehicle is at which door and when and where it is going. It even counts down the time to departure. It verifies that only the product that matches the destination is allowed to enter the door and get loaded into the trailer.

Every few seconds, CLI receives broadcasts and orders from the GM plant; it is up to the 3PL to translate this data every minute of every day into what it is feeding the assembly line. CLI can see the line and what is being built and consumed.

CLI's contract manufacturing operations are synchronized with the plant, but so are replenishment activities. CLI handles 75 to 80 percent of inbound shipments to the GM plant, and where the timeframe for some of the sequencing is as tight as 90 minutes, it also has windows on "commodity" items that could extend to six hours.

Six-hour windows might sound almost leisurely, but they are equally choreographed. CLI is watching for trigger points on when the GM lineside supply of a commodity part matches CLI's response time. It can then pick and prepare a shipment, and deliver it to the Lordstown assembly plant. Except for some specific items, there is no room for excess storage at the GM plant.

CLI's own facilities need to maximize efficiency, especially where logistics operations share space with contract manufacturing. This can include the number, type, and application of lift trucks.

Sit-down lift trucks move in the main aisles through the facility's warehouse and manufacturing areas. But, a narrower aisle serves the actual assembly operations. Here, walkie pallet jacks take the containers or pallets the lift trucks drop at a designated spot and move them to the work station. This saves floor space in the work area. It also reduces injury and damage risk because the smaller, slower, more maneuverable lifts are engaged in supplying the contract manufacturing lines.

The Lordstown plant produces about 1,000 Cruze models daily. Split-second timing is crucial on the drive train assembly line (*above*), where parts arrive at the exact moment they're needed.

(continued from page 182)
naturally belongs–in distribution," he says. "Use manufacturing-like systems and technology to create custom orders."

Treat labor as you would any significant asset, agrees Louis Cerny, vice president of Sedlak Management Consultants, a Cleveland-based supply chain consulting firm. "Review current labor practices, identify best practices, revise poor practices, develop and update standard operating procedures, and train associates," he suggests. "And use the labor management module in your warehouse management system, or add the capability."

The top 20 percent of SKUs in your facility represent 80 percent of the volume; the bottom 40 percent of SKUs comprise five percent. Walking takes up about 70 percent of picking time. Look for ways to improve performance by reducing walking time. Don't make pickers constantly walk past slow movers to get to fast movers, or consider bringing the picks to the picker using carousels or mini-load systems.

LOOK UP AND DOWN

Avoid taking a small-scope approach. "Companies often look at how they can improve one part of a process without looking upstream or downstream," Beene notes. "You might, for example, identify a problem in getting the product to the automation. If you improve just that process, the entire system would work much better."

Suppose you add a take-away conveyor to a picking area to speed processes. The actual picking could still constrain throughput. Improving the picking process could bring the operation closer to the conveyor's capacity.

Beene suggests a process improvement that was implemented at one of Kenco's distribution centers.

Pickers were using handheld scanners to record transactions in the pick area. Kenco replaced the handhelds with wrist-mounted scanners, and pickers eliminated the steps of picking up the scanner, scanning, then putting the device down to pick up the item being picked. Using the wrist scanner freed both hands to handle the product. The 1.5 seconds this saved may not sound like much, but, "depending on the volume you are picking, it can make a difference pretty fast," Beene says. Switching picking operations to wrist-mounted scanners delivered ROI to the DC in a few weeks.

Another element of improving materials handling processes is developing and adhering to corporate best practices. Through experience, Kenco has developed procedures for receiving, picking, and other functions that become part of a baseline process to measure against. Some of these procedures can become "templates" to build with when setting up a new operation.

THE HUMAN TOUCH

Employee-related costs eat up a good portion of distribution center budgets. That's why making lift truck operators and other warehouse employees more productive is crucial, says Tim Quellhorst, senior vice president of forklift manufacturer Crown Equipment Corp.

Like Beene, Quellhorst recommends optimizing the human-machine interface. For example, visibility, good controls, and operator comfort all contribute to lift truck optimization. Improved vehicle productivity and performance can help require less from the operator.

"Companies are looking for productivity, energy efficiency, and ecology, as they relate to each other," says Quellhorst. "It's not about achieving maximum productivity in one area that would negatively affect other areas."

Increasingly, every tool in a warehouse contributes to knowledge management. Crown's *InfoLink* fleet management system, for instance, helps ensure safety and adherence to performance standards, and optimizes equipment serviceability. These types of intelligent systems help ensure that only authorized operators are able to use specific pieces of equipment.

When designing its lift trucks, Crown focuses on visibility, good controls, and operator comfort to help make warehouse employees more productive.


GEODIS
wilson

In addition, intelligent systems can be programmed to require safety inspections, and on-board impact sensors can help identify unsafe practices and reduce damage.

Technology improvements and operator input can boost lift-truck efficiency to higher levels. New battery technology, for example, improves lift-truck run time and reduces charging times. But in a facility maintaining a large fleet of lift-trucks, the bottleneck occurs at the charging station.

One way to break that bottleneck is to implement a "pony express" process, where operators take their lift-trucks to the charging station, then climb into a waiting lift-truck that has been charged, fully checked, and is ready to go.

To avoid congestion at the charging station, drivers are directed to take their lift-trucks out of service on a staggered schedule. If a shift starts at 7 a.m., you don't want all the operators showing up at the charging station at the same time when all the lift-trucks are reaching a similar level of discharge. Like the legendary delivery service, there's always a "fresh mount" available for a driver.

SHOW AND TELL IN THE WAREHOUSE

With tens of thousands of available applications, and the ability to stream live video on a smartphone, it's time for shop floor devices to play catch up. Efficiency gains in warehouse management systems peaked about 10 years ago, says Peter Brereton, founder and chairman of TECSYS, a global warehouse management software provider.

In a warehouse, the administrative offices typically operate in English, but the warehouse floor may host a variety of languages and literacy levels. Add temporary, seasonal workers to the mix, and the challenges to maintain efficiency and accuracy rise exponentially.

In a warehouse's contained environment, putting wireless radio-frequency devices in the hands of workers or mounted on their lift trucks to provide real-time interaction with planning and inventory control systems has solved many problems. Adding tethered and untethered scanners moves forward another step in eliminating some picking and putaway errors.

A LOOK AT VISUAL LOGISTICS

While these systems can direct warehouse workers to the proper location, then verify through a scan that they have arrived at the correct slot, errors can still creep in.

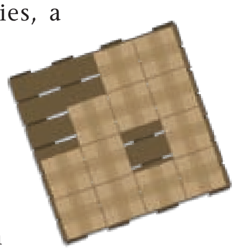
For example, when the device directs a worker to "pick one," what does that mean? In a broken case area, it might be clear that "pick one" means one item. But, if the case isn't open, does it mean pick one case?

Enter visual logistics. Using a Psion Teklogix Workabout Pro 3 handheld terminal with a full-VGA display, the TECSYS *Visual Logistics* warehouse management system sends an image to the worker to positively identify the item.

Visual logistics has helped increase throughput by 15 percent, reduce materials handling by 70 percent, cut annual physical inventory time by 50 percent, and reduce defects by 96 percent, according to TECSYS customer reports.

For one customer, North Mississippi Health System, the *EliteSeries 8 Visual Logistics* system increased the number of in-stock items by 47 percent without adding people, reduced mis-picks by 71 percent, increased fill rate to 99.98 percent, and achieved an $8-million annual cost reduction.

Dramatically improving graphics capabilities of shop-floor devices is only part of the story. While many applications use enhanced text displays to avoid ambiguities, a visual diagram of the pick face highlighting the picking location gives the operator a positive target. Following that with an image of the item and the number to be picked further reduces errors. Because the system is server-based and communicates in real time via radio frequency transmissions, it can even stream a five-second video showing the operator how the items picked are to be packed.

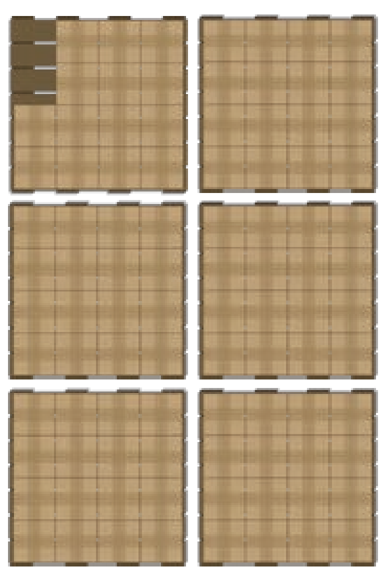


"Reducing errors results in substantial savings," explains Brereton, "especially in fields such as healthcare, where errors carry high costs and high risks."

PEOPLE, PROCESS, TECHNOLOGY

Getting smarter about materials handling means looking at people, process, and technology. Kenco's Beene suggests looking at your current process, taking a lean approach to identify opportunities for improvement, and asking if the gains expected from a capital expenditure justify the cost. Gather your research on the issues you want to address with the capital expenditure to prove the business case.

Most importantly, don't wait for management to approve your capital expense to start process improvement efforts. Get your processes in order to ensure a smooth transition. That way, even if the capital budget isn't approved, you are already making gains. ■



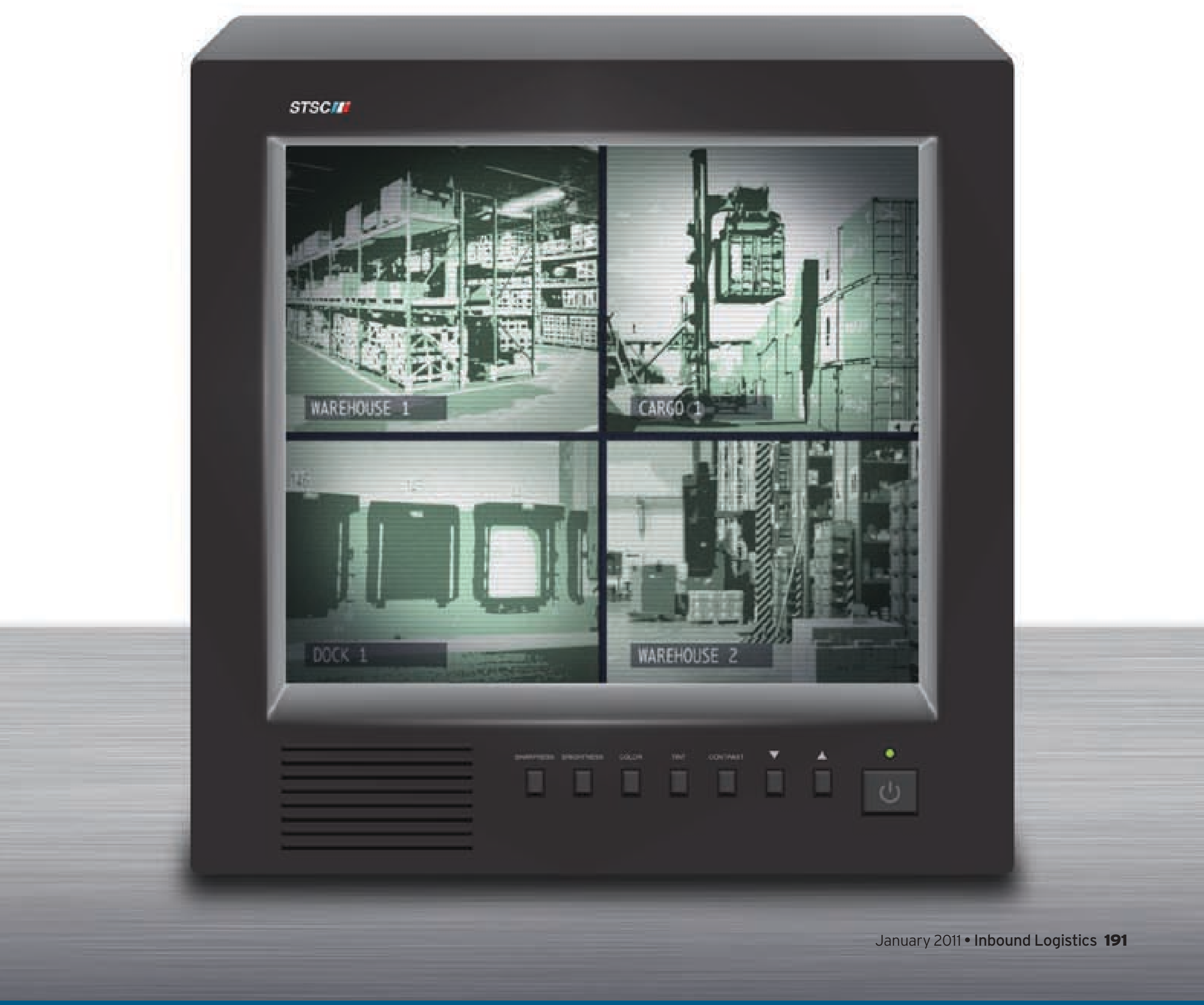
SECURING the SUPPLY CHAIN

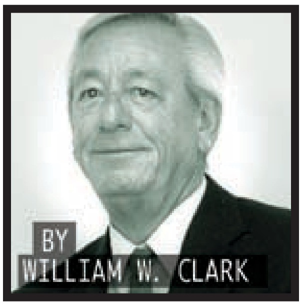
Smart shippers take the necessary steps to protect their products, shipments, and logistics operations.

Victims of theft and disaster often lament the sense of powerlessness that follows a break-in, robbery, fire, or flood. For shippers, the devastation is multiplied, as product loss or damage can cause significant financial burden and hurt market share.

Just as precautions and planning can help homeowners secure and protect their residences, shippers can take steps to ensure their shipments are safely stored and transported. On a larger scale, government agencies and private sector entities can work together to create initiatives and legislation that boost cargo transportation efficiency and security. Technology tools provide advantages through shipment visibility and access to documentation.

In the following pages, industry experts explain how to avoid threats to warehoused goods, conduct a global security assessment of trading partners, and benefit from renewed government and private sector attention to supply chain security initiatives.





How Safe is Your Warehoused Product?

Choosing a well-prepared warehousing provider ensures your stored goods are in capable hands.

A food company lost $6 million of product in a Texas warehouse fire; wine growers lost tens of millions in a recent warehouse fire in California. The food company was more concerned about losing seven days of market share because its product could not be immediately replaced. In the wine warehouse fire, small vineyards lost entire seasons of output and could not replace inventory.

Until recently, companies that outsourced storage and distribution to third-party warehouses focused more on price than protection. Today, they are giving more consideration to preventing market share loss and disrupted distribution.

Shippers who use third-party logistics (3PL) providers to inventory and distribute their product may wonder how to select an adequately protected facility. You can begin by making sure your service provider addresses the following issues to keep your goods safe.

■ **Fire.** All facilities should be protected by a National Fire Protection Association-approved sprinkler system. No fire company will fight a warehouse fire if the existing sprinkler system cannot contain it. Instead, they will act to contain the fire and prevent it from spreading to adjoining facilities or property.

In addition, all sprinkler systems must be central-station monitored. Too often, a sprinkler head goes off during the night and significant damage occurs because no alarm sounds.

■ **Theft.** Do the facilities have adequate alarm systems to help prevent break-in and theft? Alarm systems also need to be modified to address the type of products stored. High-value and high-target products require above-average alarm systems that include motion detectors and video surveillance. As with fire protection, all systems should be central-station monitored.

■ **Inventory Shortage.** Product disappearance is a leading cause of loss in all warehouses, not just 3PL facilities. Eighty percent of these losses are employee-related. Ensure that the facility conducts employee screening and periodic drug testing. Background checks of all new employees are a must.

Also ask what form of "count systems" the 3PL employs. High-target products, such as electronics, health and beauty aids, pharmaceuticals, and highly marketable consumer products, should have at least a three- to four-count system.

With proper planning and systems in place, third-party warehousing providers can offer facilities that keep stored product safe.

■ **Emergency Response Plans.** Most well-managed 3PLs have a written disaster plan, also known as an emergency response program. The 3PL should be happy to share the contingency plans it has established to ensure minimal service interruption if its facilities go down.

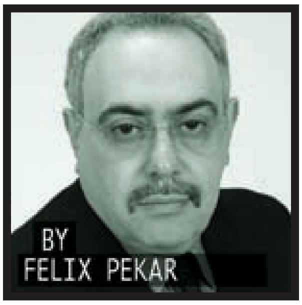
During Hurricane Rita, one 3PL sustained damage to 12 of its buildings. Fortunately for its customers, the operation was well-prepared. It had contractors on call to make temporary repairs and emergency generators to provide electrical power for the buildings and computer systems. The company even had provisions to house employees who had lost their homes or were unable to commute to work. Even with a major disaster such as Rita, the business remained functional.

■ **Insurance.** Request that your insurance carrier or risk manager physically inspect all proposed facilities prior to moving in. Too often, contracts are signed and product is moved in before the insurance carrier is notified. Your insurance carrier can order a loss-control inspection to determine if the facility is adequately protected. The inspection could result in some major recommendations that would entail significant investment by the 3PL, assuming it is willing to comply.

Be aware that 3PLs do not insure your product for loss or damage unless required in your contract. Professional 3PLs do carry Warehouse Legal Liability, but that coverage only protects the 3PL for loss or damage to your product as a result of its negligent acts.

By doing a little security homework, you can help protect your company from losing product, market share, and customers.

William W. Clark, CPCU, is president, Warehouse Insurance Management Company. 714-283-8693 • wimco@sbcglobal.net



Managing Global Security Assessments

The Customs-Trade Partnership Against Terrorism program makes cargo security optimization the private sector's responsibility.

Establishing a secure supply chain is both a worthy and necessary objective in a world where terrorism is a daily threat. Yet the vastness of the global supply chain makes it impossible for U.S. Customs and Border Protection (CBP) to secure every link in every chain leading to U.S. borders.

CBP has several options at its disposal to keep products secure. One is the authority to institute new regulations, such as the Importer Security Filing, which added new reporting requirements for ocean cargo. Another is the ability to implement voluntary government-business initiatives. Such programs, in which CBP delegates certain security assessment functions to the private sector, rely on cooperative relationships to enhance U.S. border security.

One program growing in prominence is the Customs-Trade Partnership Against Terrorism (C-TPAT). It operates on the principle that stakeholders in the international supply chain–importers, carriers, consolidators, customs brokers, manufacturers, and others–are best positioned to optimize cargo security.

Under C-TPAT, companies verify the integrity of their security practices and those of their supply chain partners. In return, C-TPAT members become eligible for a number of benefits, including fewer CBP inspections and priority processing during inspections. Companies that participate in the program save time and money–and gain the competitive advantage of faster speed to market. Being C-TPAT-certified is a business credential that is increasingly considered a decisive vendor selection factor at all levels of the supply chain. Thus, there is ample incentive for businesses of all sizes to participate in C-TPAT.

IN GOOD COMPANY

The United States is not alone in enlisting the support of private industry to secure supply chains. After all, countries in every corner of the world face ongoing security threats. As of January 2010, CBP had signed mutual recognition arrangements with:

■ New Zealand Customs Service's Secure Export Scheme Program

■ Canada Border Services Agency's Partners in Protection (PIP) Program

■ Jordan Customs Department's Golden List Program

■ Japan Customs and Tariff Bureau's Authorized Economic Operator Program

CBP is currently working to reach agreements with Korean Customs, Singapore Customs, and the European Union's Authorized Economic Operator Program.

CBP identifies five major benefits of establishing recognition arrangements with other countries:

1. **Efficiency:** C-TPAT staff does not validate overseas facilities already certified by a foreign partnership program.

2. **Risk Assessment Tool:** C-TPAT

PEOPLENET
Performance.

When it comes to safety and compliance, WHY BE AVERAGE?

Tom Schmidt of Iowa-based GSTC Trucking Company utilizes eDriver Logs to maintain a near-perfect compliance record. (Zero acute or critical violations in a recent DOT audit.) If that sounds above average, it is. PeopleNet customers perform 58.4% better than the national average across 3 major safety indices. They experience 43.8% fewer vehicle out of service events, 66.7% fewer driver out of service events and 64.8% fewer moving violations.* And when it comes to CSA, being average can be very costly. Join Tom and other PeopleNet customers outperforming the national average. To prepare your fleet for CSA visit http://CSA2010.peoplenetonline.com.

*When compared against U.S. benchmarks.

A FLEET MANAGEMENT, MOBILE COMMUNICATIONS AND ONBOARD COMPUTING COMPANY recognizes a foreign partnership program participant's status and uses it as a risk-assessment factor. C-TPAT validations thus focus on another segment of the importer's supply chain.

3. Less Redundancy/Duplication of Efforts: Foreign firms do not have to go through two separate validation visits. Plus, companies only have to undergo one revalidation visit.

Shipments handled by C-TPAT partners travel through ports quickly because they are subject to fewer Customs inspections and receive priority processing.

4. Common Standard/Trade Facilitation: Companies only have to conform to one set of security requirements because C-TPAT's minimum security criteria are the standard worldwide.

5. Transparency: Closer collaboration, similar security platforms, and increased information exchange should make commerce more transparent and expedite goods movement.

With these benefits, firms might be eager to sign up. Only certain businesses, however, may apply for C-TPAT certification. They include:

- U.S. importers of record
- U.S./Canada highway carriers and U.S./Mexico highway carriers
- Rail, sea, and air carriers
- U.S. marine port authority and terminal operators
- U.S. airfreight consolidators, ocean transportation intermediaries, and non-vessel-operating common carriers
- Mexican and Canadian manufacturers
- Select foreign manufacturers
- Licensed U.S. customs brokers

Firms interested in other countries' limitations on eligible businesses should consult that nation's Customs organization.

Next, businesses must understand that becoming certified members of these programs can be a labor-intensive process and maintaining certification can be equally challenging. There are also costs associated with meeting and maintaining the program requirements.

For instance, CBP estimates that it takes five hours to complete the C-TPAT online application form, which solicits information about the company, requires completion of a supply chain security profile, and mandates acceptance of a voluntary participation agreement.

The supply chain security profile involves a detailed self-assessment of supply chain security procedures using C-TPAT security criteria. It evaluates factors such as how the firm handles goods, its systems and provisions for physical and personnel security, access controls, packing manifest oversight, and employee training. If CBP approves the application, it then assigns a supply chain security specialist to evaluate the firm's supply chain and make recommendations for improvement prior to C-TPAT certification.

After C-TPAT membership is approved, the company must adhere to C-TPAT provisions per the signed agreement. This means it must self-assess security systems, submit security questionnaires, develop security enhancement plans, and communicate C-TPAT guidelines to companies in its supply chain. This may be the greatest challenge of C-TPAT membership: managing the security assessment process to maintain certification.

A FORMIDABLE TASK

The security assessment process can be formidable. Let's say a company has an overseas vendor that uses a freight forwarder, and that forwarder uses truckers. Products go to the company's broker, then to the freight forwarders it uses. A company's supply chain could be extensive, involving 20, 50, or hundreds of vendors. Just developing and sending the appropriate security assessment is a complex task, not to mention evaluating responses and assigning risks.

Technology to assist firms in managing global security assessments automates many labor-intensive processes. Depending on the technology selected, the system may ask a company to enter all the individual partners

comprising its supply chain. Then, the firm can go to a library of survey questions that contains survey items geared to the specific partner type and program to be assessed. Next, the firm can automatically compile the requisite security assessment for that firm and specific program.

Depending on the technology, the solution might have the capability to e-mail partners unique links to the specific assessment they need to complete. In turn, the system provides the rater the ability to review responses and assign points.

The entire security assessment process is managed automatically: building assessment items, sending assessment requests, compiling responses, resending assessments periodically, identifying problem areas, and handling efforts to reassess and remedy problems. Plus, the system provides a complete audit trail of all actions taken by the company to ensure its partners are secure and addressing weaknesses.

Technology can give a company the following insights into its supply chain:

- An overall ranking of each supply chain partner's security risk.
- Individual security rankings of each partner for specific security elements such as training, site security, and manifest preparation.
- An overall security ranking for the company's entire global supply chain across all assessment categories.
- A composite ranking of the company's entire global supply chain for a specific security element.

ASSESSING THE BENEFITS

Participating in global security assessment programs delivers benefits to firms and their supply chain partners, including fewer inspections, delays, and audits. It also grants vendors and importers preferred status because being certified eliminates many security concerns when a firm opts to include that vendor in its supply chain.

The advantages do not belong to large firms alone. Small and medium-sized businesses can also leverage the benefits of C-TPAT and other security assessment programs. Affordable technology exists to help businesses of every size manage the process. And technology's sophistication in handling all existing security assessment programs simultaneously, and the number of processes it manages and how well, goes a long way in maintaining certifications and minimizing the costs to do so.

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A New Era for Global Supply Chain Technology

High-tech advancements and a commitment to new initiatives help boost security in the logistics sector.

In business and trade sectors, common practices become obsolete and new ones evolve. In some industries, such as biomedical research, this evolution occurs rapidly. In other, more historically entrenched industries, it comes at a slower pace. Slower change is not necessarily the industry's fault, but it impacts the capacity of technology development. If there is no incentive for change, companies will spend their resources in areas other than technology.

The events of Sept. 11, 2001 created the incentive to develop smart technology for the global supply system, and drove private sector technology research and development for the logistics sector.

The global supply chain is made up of disparate countries, cultures, languages, business practices, and Customs administrations. For business to spend money and time on research and development, there must be a financial return to satisfy management and owners while complying with government mandates.

After Sept. 11, the federal government created the Department of Homeland Security (DHS), as well as programs that impacted the supply chain and its industry components. It marked the beginning of a new era of concern and commitment to research and development in securing the supply chain, while making it more visible, efficient, and revenue producing.

ACCURATE, CONSISTENT DATA

Although Sept. 11 may have been a defining moment and catalyst for the United States, support for technology within the global trade community began before the attacks. The first support for an electronic supply chain began when the World Customs Organization (WCO) adopted the Revised Kyoto Convention of 1999. This Convention developed guidelines for electronically transmitting information to Customs' computerized systems.

After the Convention made the first

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organizational step in moving the global supply chain toward the electronic age, a series of agreements and laws further defined electronic data use and implementation, including U.S. Customs and Border Protection's (CBP) Customs Trade Partnership Against Terrorism (C-TPAT) and Importer Security Filing (ISF), and the International Standards Organization's ISO 28000.

These laws, agreements, and programs share a common thread. Their goal is to facilitate trade and improve security through electronically capturing and communicating defined logistical data throughout the global supply chain from origin to destination. Analyzing this evolution reveals the new role and importance of electronic data acquisition and use, demanding a new era in supply chain security.

The transition to the electronic age within the global logistics arena requires that data must be accurate, timely, and consistent in format and content. The obstacles to obtaining reliable and seamless communication have significantly improved and will continue to change with technology. Cell phones and their evolution in both cost and functionality provide a clear example of technology's impact on logistics. The supply chain has gone digital.

TAKING INITIATIVE

This new-era technology has been aggressively supported by the European Union's Seventh Framework Program (FP7), which is designed to ensure member states reach growth and competitiveness goals in the global marketplace.

Within the FP7 Program, the INTEGRITY and SMART-CM initiatives are research programs designed to implement smart technology throughout the maritime environment. Their activity over the past three years has included input from all stakeholders in the global logistics community, including technology providers, port operators, Customs, carriers, forwarders, and shippers.

Parallel to the research conducted by the FP7 Program and the DHS, the WCO has recently established its own technology department. This new department is focused on facilitating communication with the private sector to better understand and implement technology to allow members to become more efficient in managing data and collecting duties.

The idea of a new era of smart technology has led to increased cooperation among stakeholders in the global supply chain. In September 2010, the Cargo Intelligence and Security Association (CISA) met with Under Secretary of Homeland Security Science and Technology Dr. Tara O'Toole and CBP Deputy Commissioner Todd Owens and Director Pat Simmons to discuss the private sector's role as a DHS resource.

Cooperation will ultimately benefit all of us in promoting security and businesses' bottom line.

This discussion confirmed the new era of openness and the DHS's interest in discovering what technologies the private sector has already developed to meet market needs. The private sector's understanding of business needs can guide the direction and path the DHS takes to accomplish its mission, while at the same time supporting the private sector in its role. This cooperation will ultimately benefit all of us in promoting security and businesses' bottom line.

Another mark of the new era is the commercial sector's first steps toward embracing supply chain technology. As the commercial sector assesses supply chain visibility and efficiency, companies are realizing the return on investment data represents.

The fact that various market leaders are issuing requests for quotation for large volumes of smart container security devices confirms that manufacturers recognize the value of this data. Increased supply chain control and communication provide access to, and better handling of, quality control data, risk management processes, container location tracking, chain of custody documentation, inventory control, and customer service issues.

SLOW BUT STEADY PROGRESS

In his book *The Box*, Marc Levinson outlines the difficulties supply chain pioneer Malcom McLean encountered in gaining acceptance for the sea container. Today, the value of McLean's invention seems obvious, but it took him more than nine years of hard work to finally gain industry acceptance.

Since Sept. 11, many developments affecting global supply chain technology have occurred, including trade agreements and programs, laws, administration changes, and economic challenges.

All these developments have been part of how the collaboration between the market, government, and technology has matured. This maturity has allowed the time needed to properly integrate smart technology into all sectors and to move forward to a new era for global supply chain technology.

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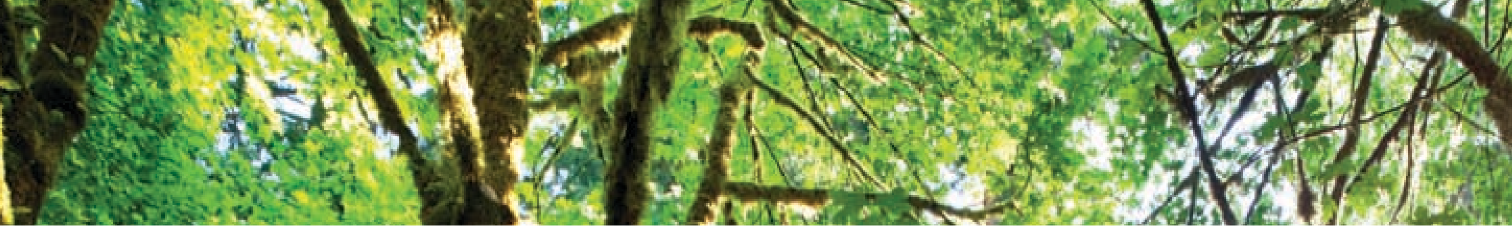



LEAN SUPPLY CHAIN

FACING LOGISTICS CHALLENGES? USE IL'S 3PL EXPERTS AND

Following the LEED

By Joseph O'Reilly

Industrial property developers are cultivating greener distribution facilities and nurturing Leadership in Energy and Environmental Design (LEED) standards compliance. The bounty? A harvest of benefits for their tenants. ›

Their presence is unremarkable: T5 lamps that suddenly flicker to life in a dark warehouse aisle; unassuming flora encroaching on parking spaces; the color and texture of a truck court's pavement. But the common sense economies that come with energy-efficient warehousing innovations–inside the four walls and beyond the dock–are becoming as transparent as the natural light flooding through clerestory windows.

Industrial property developers, such as San Francisco-based AMB Property Corporation, are digging into new real estate sites and retrofitting existing locations with the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) certifications in mind. As a result, manufacturers are finding efficiencies and cost savings in places they never considered before.

Here's one example: In September 2008, Dorel Juvenile Group, a Foxboro, Mass., manufacturer and distributor of children's products such as car seats, strollers, and high chairs, partnered with AMB to lease 150,000 square feet of space at a distribution facility in Bloomingdale, Ga., 11 miles from the Port of Savannah.

Dorel selected the Bloomingdale location as its new gateway into the booming Southeast market, and to complement its existing West Coast distribution network. Serving leading retailers including Walmart, The Home Depot, Lowe's, and Best Buy, the Savannah area presents an optimal location for receiving and redistributing product into one of the United States' fastest-growing consumer populations.

AMB's 347,000-square-foot Building 100 in Bloomingdale is also the first speculative industrial development in the southeastern United States built to the LEED Gold Standard. When completed, the developer's master-planned business park will feature four facilities that total 3.3 million square feet of LEED-certified distribution space. For retail customers such as Dorel, supply chain sustainability compliance is becoming part of the decision-making process and a topic of discussion before entering into industrial property contracts.

"About four years ago, many companies created a huge drive to be more sustainable, which led to a push toward LEED certification," says John Morgan, vice president of development, AMB Property Corporation. "So we decided to spec out a LEED facility in Savannah. We were already building and developing properties to a high sustainability level, so following LEED requirements made sense. It was also cost efficient–only an extra five-percent investment."

Building 100 near the Port of Savannah is the culmination of that vision and serves as a road map for future development within this business park and elsewhere. It is also a burning platform for tenants such as Dorel that are embarking on a long-term pursuit of energy-efficient facilities.

To get a feel for how businesses can benefit from greener warehouses both operationally and economically, *Inbound Logistics* tagged along with AMB's Morgan for a virtual tour of Building 100–and a look into why many companies are prioritizing LEED requirements in their site selection decisions.

"Operating out of a well-located facility results in lower transport costs and carbon emissions, compared to a facility located far from local population centers."

*–**John Morgan**, vice president of development, AMB Property Corporation*

LOCATION CUBED

"Location never grows old," says Morgan. There are always opportunities to find efficiencies elsewhere, such as exploring better tax incentives, and optimizing distribution networks by matching supply more closely to demand. As much as LEED innovations begin and end around the warehouse, the location of facilities is just as important.

"We've studied a range of typical customers and found that operating out of a well-located infill facility close to ports and major population centers results in an average of 21 percent lower transportation costs and 23 percent lower carbon emissions compared to operating out of a facility far from local population centers," Morgan adds.

Many goods that arrive at a port are consumed locally, so shipping them out of the city, then bringing them back, is inefficient. Although Savannah is not as large or as densely populated as, for

example, the Los Angeles Basin area, AMB's facility is located near the port and has direct transportation links to Atlanta and other regional population centers.

From a developer perspective, another important factor in LEED site selection is being able to source regional construction materials–thereby rationalizing costs and carbon outputs during the construction phase.

"Industrial buildings are composed primarily of concrete and steel," Morgan notes. "Sourcing these heavy, bulk materials from nearby areas helps increase reliability and speed transport time, and is generally more economical because materials are being trucked over shorter distances.

"They are also handled less than a product coming from thousands of miles away, which reduces the likelihood of damage and delays," he adds.

Moreover, developers often favor using local contractors and suppliers because it helps build partnership within the community, although this isn't measured by LEED.

GREEN-LIGHTING ENERGY ECONOMY

Inside and outside the distribution facility, LEED innovations are all about efficiently managing consumption, which often means recapturing energy and eliminating waste. With T5 aisle lighting equipment, for example, each fixture is attached to a motion sensor so that lights are only on when there is activity. AMB also uses large clerestory windows in and around loading docks to capitalize on ambient sunlight.

In Savannah, summer heat can present a considerable challenge when trying to reduce cooling costs. Building 100 was originally constructed with a Thermoplastic Olefin roof–a white-colored single-ply roof system–that deflects radiant heat. The evolution of thermoplastic surfaces and equivalent products continues to neutralize heating and cooling costs.

On the ground, concrete pavement absorbs less heat and eliminates buildup around the warehouse, reducing facility-cooling costs. "Black asphalt absorbs heat five to 10 percent more than concrete," says Morgan. "Businesses can cut that expense from their energy bills simply by changing materials."

Heat buildup in urban areas–referred to as the heat island effect–is a hot issue as communities across the United States look to reduce greenhouse gas emissions and energy footprints. Heat islands increase summer peak energy demand, air conditioning costs, air pollution, heat-related illness and mortality, and water quality, according to the U.S. Environmental Protection Agency.

Heat island mediation is especially important in business parks, given the

Going Green, One Step at a Time

Apart from completing the LEED certification process, companies can achieve big return on sustainability investments through small measures in warehouses, transportation terminals, retail outlets, or even administrative offices. Here are eight steps to boosting energy efficiency in existing buildings, recommended by Sarah Gudeman, a mechanical design engineer with Morrissey Engineering, an Omaha, Neb., design firm.

1. Reduce Light Pollution. Adopt site lighting criteria to maintain safe light levels while avoiding off-site lighting and night sky pollution. Technologies to reduce light pollution include full-cutoff luminaries, low-reflectance surfaces, and low-angle spotlights.

2. Use Efficient Indoor Plumbing Fixtures and Fittings. Reduce indoor water usage by using plumbing fixtures and fittings that meet the UPC 2006 or IPC 2006 fixture and fitting requirements in combination with high-efficiency or dry fixture and control technologies.

3. Optimize Energy Efficiency Performance. Existing building commissioning and energy audits help identify areas of facility operations that can be improved. Implement energy-efficient retrofits and energy-saving techniques to reduce a building's energy use. In addition to efficiency improvements, consider renewable energy options as a way to minimize the building's environmental impact.

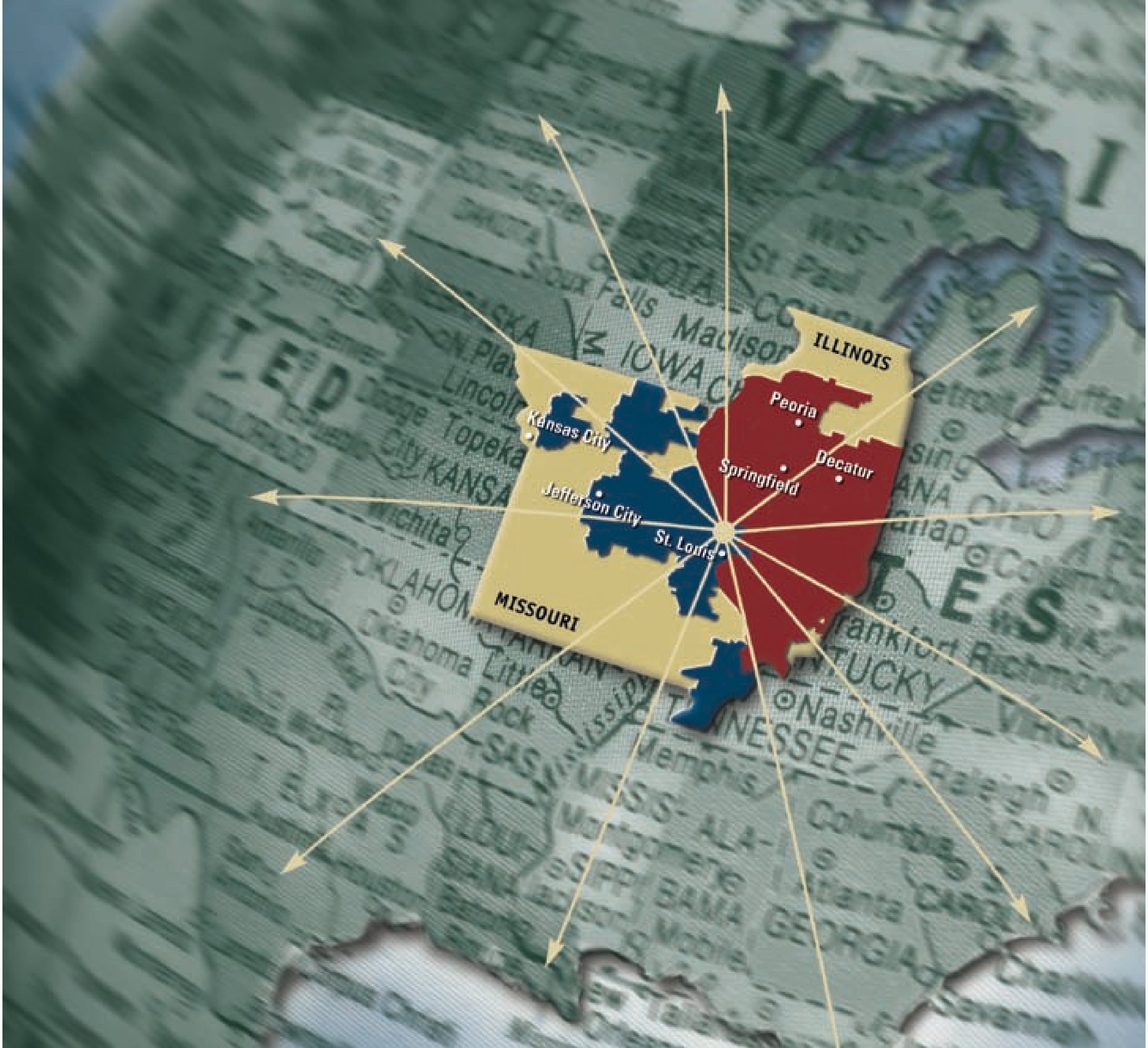
4. Engage in Sustainable Purchasing. Evaluate the items that are purchased for the building, identify more environmentally friendly alternatives, and establish a policy to purchase these alternatives when economically feasible.

5. Optimize Solid Waste Management. Work with your waste hauler or service provider to collect and analyze information on the amounts and types of waste generated by the facility and identify ways to reduce it.

6. Follow a Green Cleaning Policy. Establish a written green cleaning policy addressing standard procedures, sustainable products and equipment, chemicals handling and storage, and staff training.

7. Ensure Occupant Comfort. Conduct a survey of building occupants to determine their satisfaction with the building's thermal comfort. Develop a plan for corrective action to address problems or concerns.

8. Provide Daylight and Views. Be sure building occupants have direct views to the outdoors and natural daylight.



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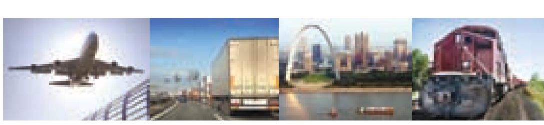

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The 411 on Building 100

AMB Property's Building 100 in Georgia is the first speculative industrial development in the southeastern United States built to the LEED Gold Standard. Among the financial and environmental benefits:

Energy use reduced by ***32%***

Water savings: ***2 million*** *gallons/year*

84.6% *of construction waste diverted*

density of infrastructure and industrial activity. Energy-efficient roofing, landscaping, and concrete pavement all help reduce heat absorption.

In truck courts with heavy volumes of freight movement, using concrete instead of asphalt also eliminates associated maintenance costs, explains Morgan. A high number of truck turns chews up asphalt. The cost difference between asphalt and concrete is generally market-driven, depending on diesel and cement prices. But it can be a long-term cost differentiator.

DRAINING INEFFICIENCY

Cool pavement strategies and landscaping also improve water efficiency and drainage. In Bloomingdale, AMB engineered the roofing system to pipe rainwater directly underground into a sediment control basin, which naturally filters water.

Using an erosion control pond at the edge of the pavement helps collect debris in the bottom over time–eliminating potential groundwater pollutants and any harmful impact on local ecosystems. In other green sites, permeable driveways and parking lots achieve the same objective.

Apart from providing shade and lowering surface and air temperatures, trees and vegetation also play an important role in enhancing aesthetics and reducing water consumption. Some flora species, such as palm trees, require little irrigation and are pleasing to the eye.

"Palm trees don't grow naturally in Savannah," observes Morgan. "So the question is, how can we present an aesthetic look and use sustainable indigenous landscaping?"

Consequently, it's critical for developers to purpose landscape irrigation for a specific facility. AMB used drought-tolerant native plants outside Building 100 and water-efficient plumbing fixtures inside to help reduce water usage by 67 percent. This savings equates to two million gallons annually, enough to provide drinking water for the city of Bloomingdale's 2,700 residents for more than three years.

"The irrigation plan is a measurable sustainability initiative," explains Morgan. "All we had to do was provide a watering program to get the plants established."

In Georgia, where water economy and usage is a critical issue, landscaping upkeep can be expensive. Every time users consume 300 gallons of water, they pay an additional Equivalent Residential Unit–a unit of measure that serves as an index to compare runoff generated by different size properties, then allocate overage charges.

OCCUPATIONAL THERAPY

One advantage of LEED strategies that is often overlooked is the impact on people who work in a building. Developing green distribution facilities can greatly improve employee morale.

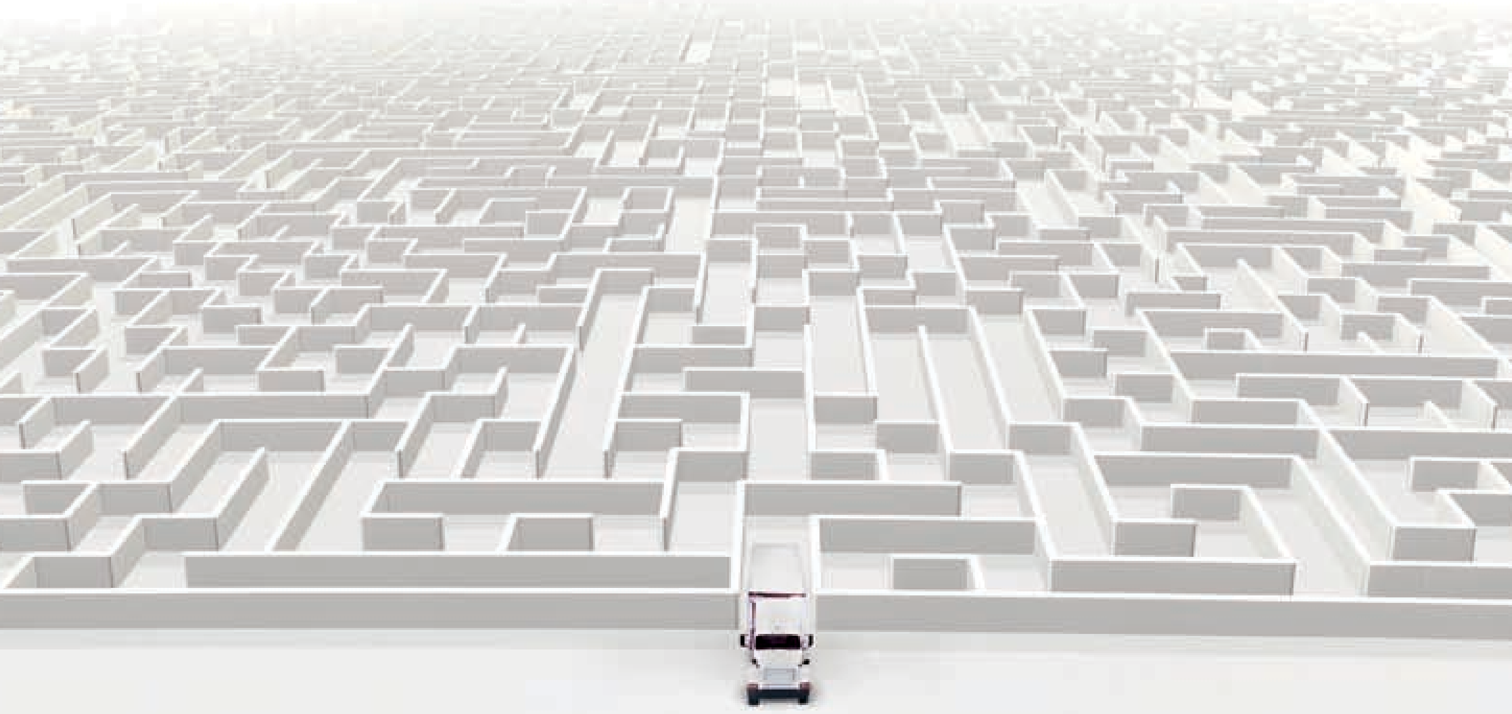
"A typical warehouse building attracts a high concentration of employees by dock doors, where they load and unload shipments," says Morgan. "We use clerestory windows that shine natural light in these areas. They provide a striking contrast to artificial lighting."

While it is difficult to quantify worker morale, the costs associated with high turnover and training are considerable. By Morgan's estimate, companies can save five percent in operational expenses simply by guaranteeing employee retention.

HOW TO TAKE THE LEED

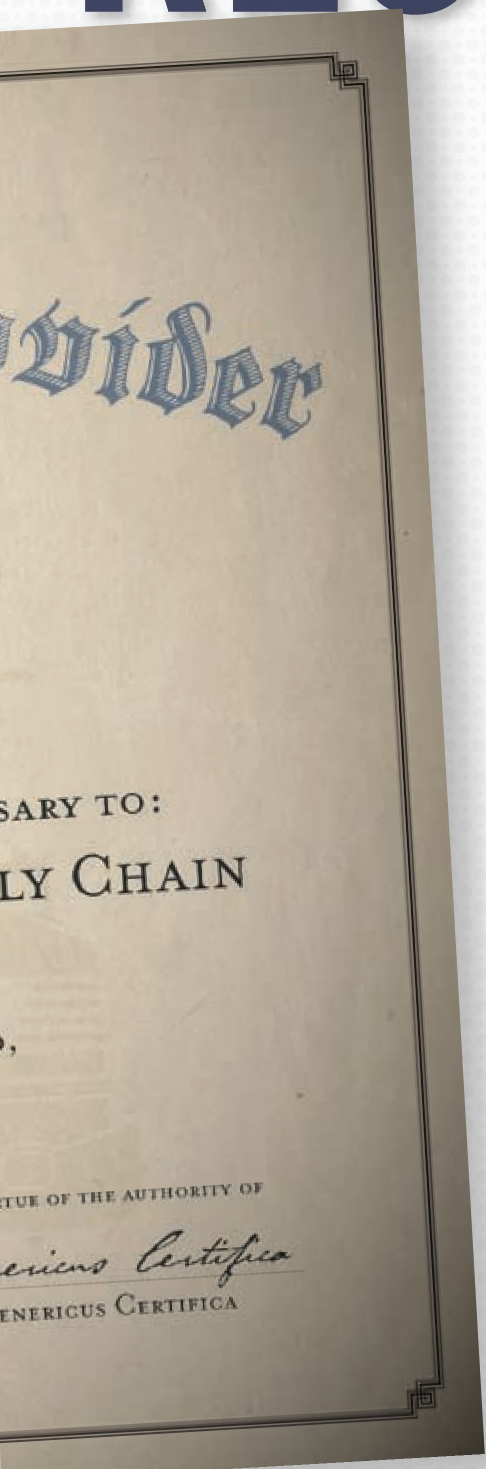
Over time, AMB's investments in Building 100 will cover a fraction of the savings that tenants recoup by using its facility. Along with sensor-controlled lighting, HVAC systems, and external cooling and drainage efforts, customers are projected to save nearly $100,000 annually in energy costs alone.

Whether companies are looking to invest in and build their own distribution center, lease or purchase an existing facility and make necessary renovations, partner with a developer to design and build a new warehouse for lease, or outsource to a third-party logistics provider, specifying LEED credentials can have a major impact on the bottom line. ■



CERTIFIABLE

RESULTS



SmartWay Partner. ISO. C-TPAT. Cargo Network Service. Cargo 2000. FAST. Logistics service providers attain a multitude of certifications, but what does it mean for shippers? Find out how providers qualify, and what you can gain from working with certified partners.

By Lisa Terry

Certified. The word suggests a deep commitment to a set of logistics goals: quality, safety, environmental responsibility, security. Many shippers routinely include certifications on their requests for information from potential third-party logistics providers (3PLs). But what does being certified really mean?

Certification can be shorthand for conveying a provider's qualifications, but it doesn't take the place of fully vetting a potential partner's practices and capabilities. It's essential that shippers understand what it takes to earn certifications, and assess how well they align with their own goals and objectives.

"Whether or not providers hold a certification doesn't tell the whole story," says Patrik Thollesson, regional director operations/BE, the Americas, for Geodis Wilson, a global third-party logistics provider with U.S. headquarters in Iselin, N.J. "It's important how they work with it–do they satisfy only the minimum requirements, or push the boundaries?"

3PLs are eligible to apply for a range of certifications depending on their services–importing, moving goods through ports, or procuring transportation. The more assets and services they offer, the more certifications 3PLs may be eligible for.

Licenses and permits are often required to hold and move perishable, restricted, or hazardous goods, and any shipments that cross an international border. Certifications fall into a different category: voluntary. Service providers that want to set themselves apart pursue certification to signify a higher level of capability and commitment.

MUST-HAVE, OR NICE-TO-HAVE?

Early applicants for certification often gain competitive advantage. The Environmental Protection Agency's SmartWay Transport, for example, is a relatively new designation for 3PLs, compared with ISO 9001, which has been available since 1987. Over time, some certifications become the price of admission in certain industries or markets.

New or old, though, certification requirements tend to grow more stringent over time, to stay ahead of security threats or reflect innovation. Once-certified doesn't mean forever-certified; many 3PLs devote considerable resources to staying compliant.

WHY CERTIFICATION MATTERS

Certifications are important to shippers because they impose rigor on the 3PL's processes.

"Overall performance manifests what certification does," says Patrick O'Malley, co-chief operating officer, Landstar System, a Jacksonville, Fla., non-asset-based 3PL. In other words, the process of qualifying causes a 3PL to examine and fine-tune internal processes, often resulting in lower costs and more efficient practices that help ensure that cargo moves safely and quickly.

"For small service providers operating one or two offices, it's easy to maintain quality and consistency," adds Grant Opperman, president of D.W. Morgan, a Pleasanton, Calif.-based 3PL. "But when they begin to expand in different areas, they run the risk of not delivering on promises to shippers."

Certification efforts such as ISO 9001 help create repeatable and extensible processes that ensure consistency. Savings are another benefit of the certification effort. Operations efficiency and cost-cutting initiatives, such as minimizing fuel consumption as part of SmartWay, net lower costs for the 3PL–and, in turn, the shipper.

D.W. Morgan (*top*) employs TAPA compliance measures to protect against theft and highjacking. Safety certifications help 3PLs move oversized cargo (*bottom*).

Many 3PLs employ at least one staffer devoted solely to maintaining certifications. Compliance can also mean process change and capital costs, such as committing to LEED-certified environmentally responsible distribution facilities.

"Persuing certifications requires a certain amount of administration, investment, training, and education, but the money and resources are well spent," says Thollesson.

3PLs must carefully consider the value certification will bring before committing those resources. C-TPAT is meaningless for those not bringing goods across the border, and non-asset 3PLs don't even qualify. And for a 3PL whose value proposition is all about speed or moving a low-price commodity through a particular lane, efficiency and low cost might outweigh a security compliance credential.

Even when 3PLs deem a certification worth pursuing, adopting new, prescribed business processes often requires yielding some of their own.

"When 3PLs sign up for certification, they sign up for the administrative and bureaucratic overhead that goes with it," says Opperman. "They trade some flexibility and freedom, and even some of their margin, to comply with a third party's established processes and help their risk assessment profile."

Achieving certification doesn't mean a company can then coast; maintaining certification takes effort.

"Any certification program done for marketing or self-promotion purposes is one that will provide little benefit and will likely waste time and resources," says Julian Grush, client/quality manager for Wheels Clipper, a 3PL in Mississauga, Ontario.

LOOK PAST THE LOGOS

A long lineup of 3PL certification logos is an impressive sight, and 3PLs devote considerable resources to attaining those credentials. But there is a difference between passing a test and acing it. Shippers seeking to select the right 3PL partner must first determine their own requirements and expectations, then look behind potential 3PL partners' certifications to probe the business processes and attitudes that make that organization tick.

Understanding what each certification signifies will help you determine whether you require a certified service provider. The following pages provide an at-a-glance guide to the steps service providers must take to earn a certification, and how their efforts benefit you.

Supply Chain Certifications

Here's a look at some of the most important 3PL certifications.

CUSTOMS-TRADE PARTNERSHIP AGAINST TERRORISM (C-TPAT)

WHAT IT IS:
A voluntary government-business initiative to create a more secure and expedient supply chain by ensuring compliance with supply chain security measures.

HOW 3PLs EARN IT:
Businesses complete an application on U.S. Customs and Border Protection's (CBP) Web site. The application solicits corporate information, a supply chain security profile, and an acknowledgement of an agreement to voluntarily participate. Companies must conduct a comprehensive self-assessment of their supply chain security procedures using the C-TPAT security criteria or guidelines jointly developed by CBP and the trade community for the company's specific enrollment category.

BENEFITS TO THE 3PL:

- C-TPAT importers are four to six times less likely to incur a security or compliance examination, according to CBP.
- Certified partners receive front-of-the-line privileges for containers that are selected for an examination.
- Procedures for assessing and managing supply chain logistics are strengthened as a result of joining C-TPAT, according to a 2010 survey of C-TPAT members.

BENEFITS TO SHIPPERS:

- Shipments move more quickly through ports.
- Goods are more secure.
- Shippers are assured that subcontractors are also certified.
- Goods are less likely to be delayed or damaged as a result of Customs inspections.

ADDED INSIGHT

- 42 percent of surveyed C-TPAT members believe the benefits of participation outweigh the costs, with those holding certification the longest most likely to see benefits.
- Seven percent of surveyed C-TPAT members report dropping out of the program. Some critics say increasingly stringent requirements mean fewer shipments qualify, and smaller companies have a tough time complying. Less scrutiny could also make C-TPAT-certified assets a target for smugglers.
- C-TPAT does not exclude shipments from non-Customs inspections, such as USDA.
- There are 32 certified 3PLs in the program, which has been open to 3PLs since January 2009.

CARGO NETWORK SERVICE (CNS) AND CARGO 2000

WHAT IT IS:
The International Air Transportation Association's (IATA) Cargo Network Service (CNS) certifies freight forwarders meeting its performance, reliability, and security criteria. Cargo 2000 is an industry group within IATA that implements measurable processes, backed by quality standards, to improve air cargo efficiency.

HOW 3PLs EARN IT:
For CNS, individual staffers must pass a training course; companies must meet business, financial, and insurance requirements. Cargo 2000 membership is open to all airlines, freight forwarders, and others able to meet the system implementation requirements and schedules.

BENEFITS TO THE 3PL:

- Membership in either program decreases the time required for manual track-and-trace and managing exceptions, which helps reduce claims.
- Standardized processes improve participants' operations.
- Participants' processes are moved toward paperless shipping management.

"CNS and Cargo 2000 absolutely offer cost savings," says Geodis Wilson's Thollesson. "They also provide an objective way to assess performance."

BENEFITS TO SHIPPERS:
Air cargo shipments move more expediently.

ADDED INSIGHT

Cargo 2000 has more than halved the number of individual processes in the air cargo supply chain to just 19.

FREE AND SECURE TRADE (FAST)

WHAT IT IS:
A commercial clearance program for known low-risk shipments entering the United States from Canada and Mexico, enabling expedited processing at 55 of the 105 land border crossings.

HOW 3PLs EARN IT:
Every link in the supply chain must be certified under C-TPAT for participation in FAST. Technically, individual drivers are eligible for certification; currently 87,000 drivers are FAST-certified.

BENEFITS TO THE 3PL:
- Provides access to dedicated lanes at border crossings.
- Reduces the number of inspections.
- Allows front-of-the-line processing for Customs inspections.

"Participating in C-TPAT and FAST was a critical factor when we introduced services between Texas and Guadalajara, Mexico," says D.W. Morgan's Opperman. "A contract manufacturer told us it was a tremendous risk and a tremendous opportunity." C-TPAT and FAST credentials assure shippers that the 3PL is equipped to succeed in challenging conditions.

BENEFITS TO SHIPPERS:
- Shipments move more quickly through ports.
- Goods are more secure.
- Subcontractors are also certified.

ADDED INSIGHT
Most FAST processing occurs at border crossings in Michigan, New York, and Washington, as well as several points from California to Texas.

LEADERSHIP IN ENERGY & ENVIRONMENTAL DESIGN (LEED)

WHAT IT IS:
The LEED green building certification program encourages and accelerates global adoption of sustainable green building and development practices through a suite of rating systems.

HOW 3PLs EARN IT:
By constructing compliant distribution facilities.

BENEFITS TO THE 3PL:
- A California study of LEED construction found less than two percent of construction costs yields lifecycle savings of more than 10 times the initial investment. For example, $100,000 spent to incorporate green building features into a $5-million project results in savings of at least $1 million over 20 years.
- Delivers cost savings on energy, waste disposal, water, operations, and maintenance.
- Increases worker productivity.
- Provides support and data for 3PL and shipper sustainability goals.

"A LEED building is more cost-effective over the facility's lifecycle because it reduces natural resource consumption. And using sustainable building materials and natural light reduces the environmental impact," says Tony Oliverio, senior director, operations strategy at San Mateo, Calif.-based 3PL Menlo Worldwide Logistics. "LEED buildings can also contribute to longer term lower costs in the supply chain–a savings that is passed on to shippers."

BENEFITS TO SHIPPERS:
- Lower costs may be passed along.
- Sustainability goals are supported.

ADDED INSIGHT
LEED uses a 100-point rating scale, with Certified, Silver, Gold, and Platinum tiers.

ALPHABET SOUP
Additional 3PL Certifications

Many industry associations and organizations offer specialized certifications that can benefit 3PLs. Here's a sampling.

GS1 CERTIFIED DATA QUALITY SOLUTION PARTNER: The accuracy of dimensional data for packages is critical to help retailers anticipate space requirements throughout the supply chain and synchronize their master data. Problems most often occur when subsequent changes to product and packaging are not updated in databases. GS1 US, a not-for-profit organization that administers the Universal Product Code, offers a Certified Data Quality Solution Partner program to those with the right equipment and demonstrated knowledge of GS1 GDSN Package Measurement Standards. The program allows certified partners to make these measurements on behalf of supplier customers for the many large retailers requiring certified measurements.

"As a GS1 partner, we're a one-stop shop," says Mike Ghassali, COO for Genco Damage Research, a unit of 3PL Genco ATC, Pittsburgh, Pa. "It's a value-add."

ISO 28000: The ISO 28000 series of standards on supply chain security management systems addresses potential security issues at all stages of the supply process, targeting threats such as terrorism, fraud, and piracy.

TRANSPORTED ASSET PROTECTION ASSOCIATION (TAPA): TAPA certifies facilities meeting its Freight Security Requirements standards for storing and handling high-value, theft-targeted cargo. A related set of standards covers Trucking Security Requirements for these goods.

TRANSPORTATION INTERMEDIARIES ASSOCIATION (TIA): TIA's Performance Certified Program is a best-practices program with guaranteed levels of freight payment, mandating bond, insurance, and credit score requirements and compliance with a code of ethics.


Supply Chain Challenges?
Customs Brokerage
Outsourced Logistics
Technology Enabled Solutions
Global Transportation Service
Local Support
Specialized Services
Supply Chain Management
SEKO®
Air Freight
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SMARTWAY TRANSPORT LOGISTICS PARTNER

WHAT IT IS:
One of three designations available through SmartWay, the Logistics program encourages 3PLs to promote the program and use SmartWay carriers.

HOW 3PLs EARN IT:
3PLs earn a score annually based on the number of SmartWay carriers they use, multiplied by the freight volume placed with those carriers. Top performers–about 20 percent–can use the SmartWay logo and are so designated on the SmartWay Web site. Currently, 450 3PLs and logistics companies participate.

"As SmartWay has evolved, partners have become more efficient, and we periodically have to raise the bar," says Cheryl Bynum, program manager for SmartWay Transport.

BENEFITS TO THE 3PL:

- Adds value to shippers through more efficient transport; from 2004 to 2008, SmartWay carriers saved 1.5 billion gallons of fuel, worth $3.6 billion, and 14.7 metric tons of CO_2.
- Enables 3PLs to report data for shipper sustainability programs.
- Encourages adopting best practices to attain compliance, such as adding a weighted carrier SmartWay score as a factor in carrier selection.
- Provides opportunities to share ideas among SmartWay 3PLs.

"3PLs managing transportation control a key component of the sustainability roadmap," says C. Thomas Barnes, president, Ann Arbor, Mich.-based truckload brokerage company Con-way Multimodal.

BENEFITS TO SHIPPERS:

- Supports sustainability efforts.
- Provides more transparency into freight carriers, because 3PLs must track this data for compliance.

ADDED INSIGHT

Shippers, truck and rail carriers, and truck stops can also join SmartWay.

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO) 9001 AND 14001

WHAT IT IS:
ISO 9001 is the internationally recognized standard for the quality management of businesses. The standard applies to the processes used to create and control products and services, and prescribes systematic control of those activities to ensure that business needs and customer expectations are met.

ISO 14001 applies to the environmental management of businesses. It prescribes controls for activities that impact the environment, such as natural resources use, waste handling and treatment, and energy consumption.

HOW 3PLs EARN IT:
ISO 9001 and ISO 14001 certification is carried out by third-party testing and accreditation parties.

BENEFITS TO THE 3PL:
ISO 9001 helps 3PLs comply with other certification programs due to its rigorous documentation of processes and continuous improvement requirements.

"ISO 9001 demonstrates our entire team's commitment to continuous improvement," says William R. Cortez, president and CEO of CorTrans Logistics, a 3PL in Norcross, Ga. "ISO 9001 is a key ingredient to achieving our organization's goals."

BENEFITS TO SHIPPERS:
As a result of documented, consistent processes across the 3PL's operations, shippers attain better visibility and higher service levels. Some industries, such as high-tech, commonly require 3PL ISO 9001 certification. "All our processes are ISO-prepared," says Menlo's Oliverio. The 3PL obtains certification for a particular facility upon customer request. "It ensures we are providing the level of service that we've committed to. 3PLs that take an ISO-type approach are much more efficient in how they conduct business, and achieve higher productivity."

ADDED INSIGHT

ISO 9000 is a family of standards that represents an international consensus on good quality-management practices.

ON THE ROAD *part 2*

Looking for New Directions

by Joseph O'Reilly

Writing about transportation and logistics is a blur. It's like watching the supply chain flash before your eyes while doing 80 mph on the interstate. In an industry intrinsically tied to supply and demand ebbs and flows, change is constant. Technology evolves. Strategy shifts. Innovations and best practices emerge. As to the writing, deadlines approach too quickly and sources never emerge fast enough.

Taking to the road and visiting with people and companies that are "doing the business," offers brief moments when you can freeze-frame this flurry of activity, cut through the dissonance and noise, and capture a true picture of how and where the U.S. transportation and logistics sector is moving.

In 2009, I spent the year traversing the country episodically engaging new people, places, and perspectives that are shaping the future of the supply chain. This year, the odyssey continued as I went exploring other directions.

Follow along as I make Panama City, Fla., my fall break destination (*pg. 222*), touch down in Memphis (*pg. 230*), and take a spin cross-country (*pg. 236*).

Between the Pines In Florida's Great Northwest

DESTINATION:

Panama City, Fla.

LOCATION:

Panama City, the county seat and principal municipality of Bay County, is located in the middle of Florida's panhandle, along the Gulf of Mexico.

POPULATION:

Panama City (37,408), Bay County (169,562)

DISTANCE FROM INBOUND LOGISTICS HQ:

1,225 miles

Sugar sand beaches and emerald green waters have made Bay County, Fla., a Spring Break mecca. But the area's real gem is nestled deep within the pine.

When commercial land developer The St. Joe Company invited me on a November 2010 tour of the new Northwest Florida Beaches International Airport and area businesses I was mildly intrigued, if suspicious.

Full disclosure: I'm not a beachcomber. Any sight of sand or smell of saltwater triggers a Pavlovian response best characterized by a Scooby-Doo cartoon character running from a ghost. Zoinks!

Visiting Panama City in the quiet cool of autumn sounded a little different. And this trip dug deep, beneath the sand and beyond my superficial biases. It uncovered a hidden treasure.

Panama City, Florida

Between the Pines in Florida's Great Northwest

Florida Beaches Airport is growing up with its community.

Following Footprints From the Sand

There's more to northwest Florida than surf, sand, and sun. In fact, one of the most striking characteristics is its dense woodland. The area's virgin and planted timber features mostly pine: slash, longleaf, shortleaf, loblolly, with some nosy scrub oak mingling between. Driving east and looking left along Route 30 toward Panama City, it's hard not to notice the dense swath of pine forest lying between the Gulf Coast and the Intracoastal Waterway, then north to I-10 and beyond.

The beaches are Florida's calling card, and tourism has been a great economic escape for the fat part of the panhandle that is still largely rural and undeveloped. But the timber industry remains a well-rooted trade.

The St. Joe Company, which has become the primary kindler of commercial real estate and economic development in the area, grew out of the DuPont family's stake in the lumber and paper milling industry during the Great Depression. In much the same way Henry Ford assembled a family of integrated industrial spokes around the automobile hub, The St. Joe Paper Company became a forestry, railroad, and real estate conglomerate as it acquired vast tracts of land across the state.

Today, the St. Joe Company has largely divested its timber business–as its name change suggests–with a primary focus on preserving and developing about 600,000 acres of land across the state. The company still has an interest in transportation and commerce, albeit from an entirely new perspective.

The future promise of Panama City and Bay County lies, naturally, within a dense stand of pine. Northwest Florida Beaches International Airport officially opened for business on May 23, 2010, becoming the first greenfield airport in the country post-Sept. 11, and the first international airport to debut since Denver International Airport in the early 1990s.

In 1998, St. Joe gifted 4,000 acres of land to relocate and develop a new hub to replace the aging Panama City-Bay County International Airport. It took more than one decade of legal wrangling and environmental impact studies, then two years of construction, to complete the project. Some locals viewed the developer's role in the new airport as a conflict of interest. St. Joe does have an important stake in making the area more accessible to travelers and businesses alike–as do residents who depend on the economic inflows and jobs that follow.

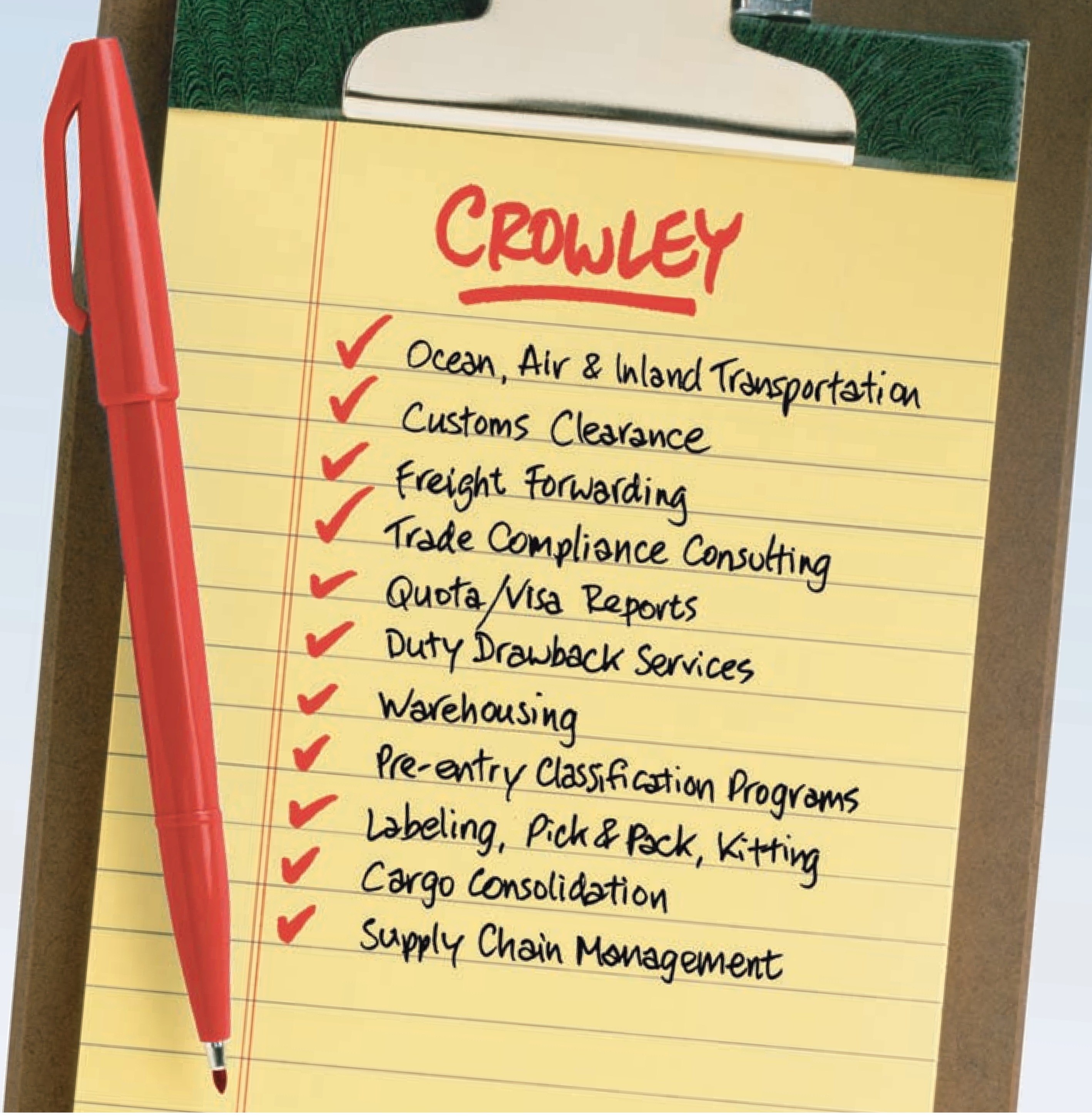
The developer has grand plans for the 78,000 acres surrounding the airport–an area slightly larger than Washington, D.C. The West Bay Sector Plan includes commercial, office, retail, hotel/resort, and residential development adjacent to the airport, featuring 300 acres for industrial and warehousing activity and another 600 acres for manufacturing and distribution; 34,000 acres have been set aside as an environmental preserve.

St. Joe's investment in this project offers a microcosm of what local authorities and businesses hope will become a model for greater economic diversity in the area–a balanced approach to growing tourism, attracting home ownership, and creating more jobs through industrial and commercial development. At the center of this 50-year controlled plan is Florida Beaches Airport.

Exploring a Green Airport

Touring the airport terminal, it's hard not to marvel at its newness: flat-screen TVs, ample seating, fresh blue paint, an airy, high-ceilinged baggage terminal with clerestory lighting. Green innovations and energy efficiencies are equally transparent inside and out. But that's just a surface perspective.

A privileged look behind the check-in counter,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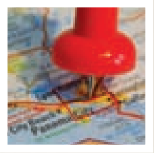

Between the Pines In Florida's Great Northwest

into the airport's labyrinthine baggage conveyance system and TSA inspection facilities, reveals a state-of-the-art nerve center. Walking among tiered conveyors that inspect, sort, and divert baggage through a series of automated checkpoints has the look and feel, whirs and whistles, of a Rube Goldberg-engineered warehouse sortation system that got lost at baggage claim.

At 148 feet above, still tethered to terra firma, a 360-degree panorama of the airport property presents another perspective. From the air traffic control tower, you see nothing but pine for miles around. The airport has plans to build out the 4,000 acres it currently occupies, including 1,400 acres of aviation-related, through-the-fence industrial space that is part of the West Bay Sector Plan.

Currently, Florida Beaches Airport is nothing more than a tourist hub, served by Delta and Southwest, and some charter businesses. Plans are in the works to add another crosswind runway as a complement to the featured 10,000-foot ribbon of tarmac. Shovel-ready warehousing or distribution space is not available yet and freight operations are still to come.

But talking with local economic development officials and area businesses, you quickly understand the importance of transportation accessibility as a means for further growth–something that is often taken for granted in more populated areas with competing airports.

"It's an airport that can grow up with the community," says Janet Watermeier, executive director of the Bay County Economic Development Alliance. With new direct Southwest service to Washington, "companies can compete for projects simply by getting to DC," she adds.

This convenience is important for another reason. Back up in the tower, listening to a heavily tattooed air traffic controller, a former U.S. Navy pilot, talk about his past career and current occupation, you quickly gain appreciation for another important institution that calls Bay County home.

Drafting New Logistics Talent

The U.S. military presence in Northwest Florida is pervasive, with seven bases located in the surrounding region. The largest employer in Bay County is the U.S. Navy; government industry (18.3 percent) is second only to trade, transportation, and utilities (18.7 percent) among top industry jobs outside of agriculture.

The United States Naval Support Activity Panama City is a naval base located on 648 acres of waterfront property along St. Andrews Bay and the Gulf of Mexico in Panama City Beach. It's the Navy's premier diving and salvage research, development, testing, and training site. Driving past the well-gated citadel, "Go Navy" flags flutter in the wind.

Twelve miles east of Panama City, Tyndall Air Force Base covers about 30,000 acres and operates three runways. The facility is home to 76 F-15 Eagles, eight F/A-22 Raptors, and two E-94 aircraft.

By air and by sea, economic flows and job growth in and around Panama City are largely tied to the Department of Defense (DoD) and other military-related activity. Much of the local industry focuses on aerospace and defense, research and development, creating a cluster-busting wealth of new business opportunities.

As an example, Applied Research Associates (ARA),

Duty, Honor, Country, and Pride

I've never had the privilege of serving our country. But I have paraded around in a U.S. Army garrison cap, spent summers backyard-bivouacking in a U.S. Army-issued canvas pup tent, and tailgated at more than a few Army, Navy, and Notre Dame football games. Such are the memories of growing up with a dad who spoke proudly of his army days.

For the children of many immigrant parents, joining the U.S. military was a welcome and honorable path to a better future. The GI Bill offered some soldiers returning from war an opportunity to get an education and follow new career paths.

For today's service men and women matriculating out of the military into the civilian world, the transportation and logistics sector is a welcome benefactor. And for areas such as Panama City, this wealth of talent is a magnet for economic development.

Visiting Panama City was a great learning experience. More importantly, it made me proud of the men and women who serve.

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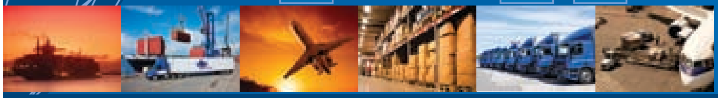

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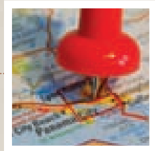

an Albuquerque-based company that provides innovative solutions to technical problems in science and engineering, operates a facility in Panama City. ARA is a working laboratory that bids out contracts for projects with the DoD, Homeland Security, and transportation authorities. Employees enjoy what they do; and looking out the office window isn't half bad either.

The company's office is located in an old cannery on the water. Approaching the building at lunchtime, pelicans dive-bomb for fish, while in the distance a foghorn blows for no apparent reason.

Inside ARA's remodeled cannery, staffers are busy working on various experimental projects. Among other things, scientists and engineers are converting algae oil into a fuel source for the military; and tinkering with a Field Intravenous Fluid Reconstitution program that saves lives by filling intravenous bags as needed at battlefield hospitals. The device manufactures IV fluids just in time, in lieu of shipping pre-packaged medicines into the field.

This is merely a petri-dish perspective of the activities taking place at ARA. But the company's business approach is fairly standard.

"We have a demand and an idea," explains Steve Baxter, a senior engineer for ARA. "We perform a benchtop experiment to test an idea and its merit; then scale technology up to a pilot phase." From there, executable models and patents are pushed along to outside contractors for production.

Much of what ARA is researching and developing for the military has applications for the private sector as well–a target market the company is gradually moving toward. The maturation of companies such as ARA bodes well for further economic development growth throughout Bay County.

Engineering and R&D activity attracts manufacturing and creates jobs. More telling, this convergence of military expertise and private sector demand for logistics and transportation talent offers a diverse and highly skilled workforce for an area that's looking to attract like-minded business. ■

Walking along the beach just after dawn on a bright and blue autumn morning, I discover a glimmering reason why Bay County is such a draw. Florida's panhandle is a beautiful place to be, calm and serene. A rainbow of colors reflected in the water at sunrise and sunset compete with the pearl whites and emerald greens that dominate the day.

For many economic development authorities around the country, playing the quality-of-life card can be the hardest part of attracting interest and investment. In Panama City, it's a given. The new airport provides a more attractive and convenient means to lure tourists and businesses to the Emerald Coast.

Still, one challenge resort areas face is creating a diverse economic environment where transient tourism and well-rooted industries bond. It's a tricky proposition. You need critical mass in terms of new jobs, year-round home ownership, transportation infrastructure, and education.

Northwest Florida possesses many of these attributes and is working to fill in some of the gaps. Road connectivity is a concern and the transportation and logistics piece south of I-10 remains nebulous. But the area also holds a wild card. The U.S. military presence is a major incentive, attracting support industries while providing a skilled labor pool brimming with potential.

Sitting in St. Joe's map room at the end of the press trip, listening to company executives share their vision for the future, I feel like I'm being briefed for a clandestine mission. In some ways, I am. But it's not a secret.

Bay County's directive is fast gaining currency among local businesses. The next step is convincing the masses. My guess is it won't be a tough sell.

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FOR MORE INFORMATION
Rob O'Brian, CEcD/President
Joplin Area Chamber of Commerce
320 East 4th Street, Joplin, MO 64801
www.joplincc.com * robrian@joplincc.com
(phone) 417.624.4150
(fax) 417.624.4303

Midnight in Memphis

DESTINATION:

Memphis, Tenn.

LOCATION:

Memphis is the largest city in Tennessee, third-largest city in the U.S. Southeast, located in the southwest corner of the state along the Mississippi River.

POPULATION:

676,640

DISTANCE FROM INBOUND LOGISTICS HQ:

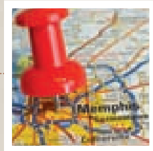
1,096 miles

As a transportation and logistics writer, burning the midnight oil is a habit of choice.

In the wee hours of the night, distractions are few. It's me and my Mac, and the awkward tap-tap – silence – tap-tap as I hunt and peck through the alphabet.

But I'm not alone. Writing aside, freight movement belongs to the night. All over the United States, there are places where the clock never stops, where the second hand spins faster after the bell tolls midnight. While the world sleeps – and as I struggle with piecing together sources and research into a cohesive sentence, paragraph, article – people are actually doing what I'm trying to describe in words. That's the real story.

It's hard not to be intrigued, then, by a press trip agenda that begins at 11 p.m. and carries through into the next day. In June 2010, the Greater Memphis Chamber of Commerce invited me to tour the FedEx Memphis hub at midnight. Accepting was an easy decision – and, for once, a worthy late-night excuse to procrastinate.



Memphis, Tenn.

Midnight in Memphis

Approaching FedEx Express' Memphis hub at 11 p.m. on a spring night is awe-inspiring. Even one mile away, floodlights pouring from the 832-acre facility fill the darkness. It's comparable to an NFL stadium parking lot on game night, but bigger. In fact, the FedEx hub is eight times larger than the Tennessee Titans' LP Field complex. It takes 20 minutes just to drive across the facility.

Many of the 8,000 employees who make up the night crew leave their cars in the four satellite parking lots surrounding the hub, then hop shuttle buses to the facility. Before the overnight shift begins at 11:30 p.m., the entrance lobby is a mad rush as employees spill out of shuttles. Upon entrance, all employees and guests pass through airport metal detectors. Workers are well-conditioned to the nightly ritual, so movement is fast and fluid.

At 9 p.m., when commercial airlines stop flying in and out of Memphis, the city shuts down–apart from Beale Street. It's FedEx time. Between 10 p.m. and 6 a.m., Memphis is the busiest airport in the world. On an average night, the facility handles 150 airplanes and 1.5 million shipments, 2.2 million at peak, and more than 4,000 arrivals and departures per month.

Out on the tarmac, with golf carts, bomb carts, and tugs hustling about–ferrying people, freight, and fuel–you get an idea of how FedEx manages such a monumental task every night of the year. At its busiest, planes land every 45 seconds on three north/south runways and two that run east/west.

A Nighttime Symphony

Watching planes descend from the sky and take off in perfect unison is a nighttime symphony. But even FedEx is prone to discord once in a while. Mother Nature dictates everything. Work hours depend on weather–and whether airplanes can arrive and depart. Employees call automated switchboards for updates. FedEx has contingency plans on top of contingency plans.

Back on the tarmac, offload teams go from input to input, unloading cargo from idling planes. In one area, FedEx aircraft are neatly lined up in two rows facing each other, with a lane in between to accommodate intermediary traffic. It takes between 17 and 31 minutes to offload a plane. Diesel trucks follow suit, fueling a fleet of planes that serves 95 percent of the global economy on a 24- to 48-hour basis. This includes 220 countries and territories, and six continents.

Closer to the hub, conveyors help move freight in and out. "Conveyor belts are like tires," explains Ed Miller, a FedEx employee and tour guide. "They get flats and require constant upkeep."

Aircraft require maintenance, as well. In the near distance, two well-lit, World War II-like hangars illuminate their occupants–a 777 in one, three widebody aircraft in another. Ninety percent of all FedEx airplane maintenance checks happen in Memphis. Tail #172 might not return to the hub for months at a time while it cruises the world delivering packages.

Inside the Matrix

From outside on the tarmac to inside the FedEx hub–called the "matrix" for obvious reasons–the

A Matter of Choice

FedEx is to the world what it is to Memphis–simply, it's everywhere. From the FedEx Forum, home of the NBA's Memphis Grizzlies, to the FedEx St. Jude Classic PGA Tour stop at nearby TPC Southwind, to the FedEx Institute of Technology at the University of Memphis, you'd be hard-pressed to find a city and a brand that are more intrinsically tied.

This thought occurred to me as I sat with journalists, local logistics luminaries, and government officials at a morning meeting sponsored by the Memphis Chamber of Commerce. Listening to Arnold Perl, a partner with the law firm Ford & Harrison, talk about the city and its abundance of transportation options, I did a double-take when he said, "Memphis is a city of choice."

Technically he is right, of course. Beyond the airport, the city lays claim to a dense network of transportation connections found nowhere else in the country–and arguably the world. But for many businesses in Memphis, FedEx is the only choice.

Memphis, Tenn.

Midnight in Memphis

difference is night and day in terms of T-5 lighting and temperature. The belly of the beast is a hot mess of automated package-sorting systems, conveyor belts, and boxes. Employees coolly and quickly bring order to chaos.

The FedEx hub really is super: It encompasses roughly 15 million square feet of sortage space–the equivalent of 112 Sam's Club warehouse stores.

The primary package-sorting matrix has two sides, east and west. Purple and orange racks dominate subtler greens and yellows, and the pedestrian red and gray mezzanine walkways. Much like its colors, the matrix is loud. Fans whir round in an effort to circulate stagnant air.

Watching an assortment of packages course through myriad arterial conveyances is mind-boggling. When shipments arrive in the hub they are scanned and measured, identifying where a package is shipped from, how much it weighs, and where it's bound. Workers busily flip boxes label up, and place them on conveyors.

Farther along, there's another conveyance, and a cascade of colored boxes of assorted shapes and sizes sliding off a tilt tray sorter–all triggered by a bar-code label scan. If you've ever seen an avalanche, and the detritus left in its wake, this is the distribution center equivalent. Workers pick through the debris that falls down the chute–Virginia Farms' flowers, blood packaged on dry ice, medicine packs, even boxes filled with live lobsters–and send them on their way.

In the primary package facility, FedEx processes 2,500 items every hour. After boxes leave the matrix, they are typically sorted two more times before they are placed in outbound containers and positioned on planes for departure.

A two-hour tour of the FedEx hub at night doesn't do it justice. There's too much going on to truly capture and appreciate the sheer immensity and accomplishment of sorting 1.5 million packages a night, 365 days a year.

FedEx hub: handling 1.5 million packages a night

"The FedEx hub is like an anthill," says Mark Herbison, senior vice president of economic development for the Greater Memphis Chamber of Commerce. "You can't understand how they get it done." ■

On April 17, 1973, Federal Express debuted by delivering 186 packages to 25 U.S. cities on 14 small aircraft.

To even imagine what life was like before expedited shipping took flight is difficult to grasp.

I've been to a few FedEx hubs in my travels – Anchorage and Greensboro, notably – but Memphis is clearly the grandfather of them all. Make no mistake about it; the matrix is a dinosaur compared to the state-of-the-art, bell-and-whistle-laden distribution facilities FedEx operates elsewhere. Despite this absence, the Memphis facility has the look and feel of a trustworthy, nuts-and-bolts, legacy ERP system that may be a little cumbersome, but always gets the job done.

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Cross-Country Running

LOCATION:

New Jersey, Pennsylvania, Ohio, Indiana, Illinois, Missouri, Kansas, Colorado, Utah, Arizona, Nevada, California

ROUTE:

I-80 west to Akron, Ohio; I-77 SW to Columbus; I-70 west to Cove Fort, Utah; I-15 SW to San Diego

DISTANCE FROM INBOUND LOGISTICS HQ:

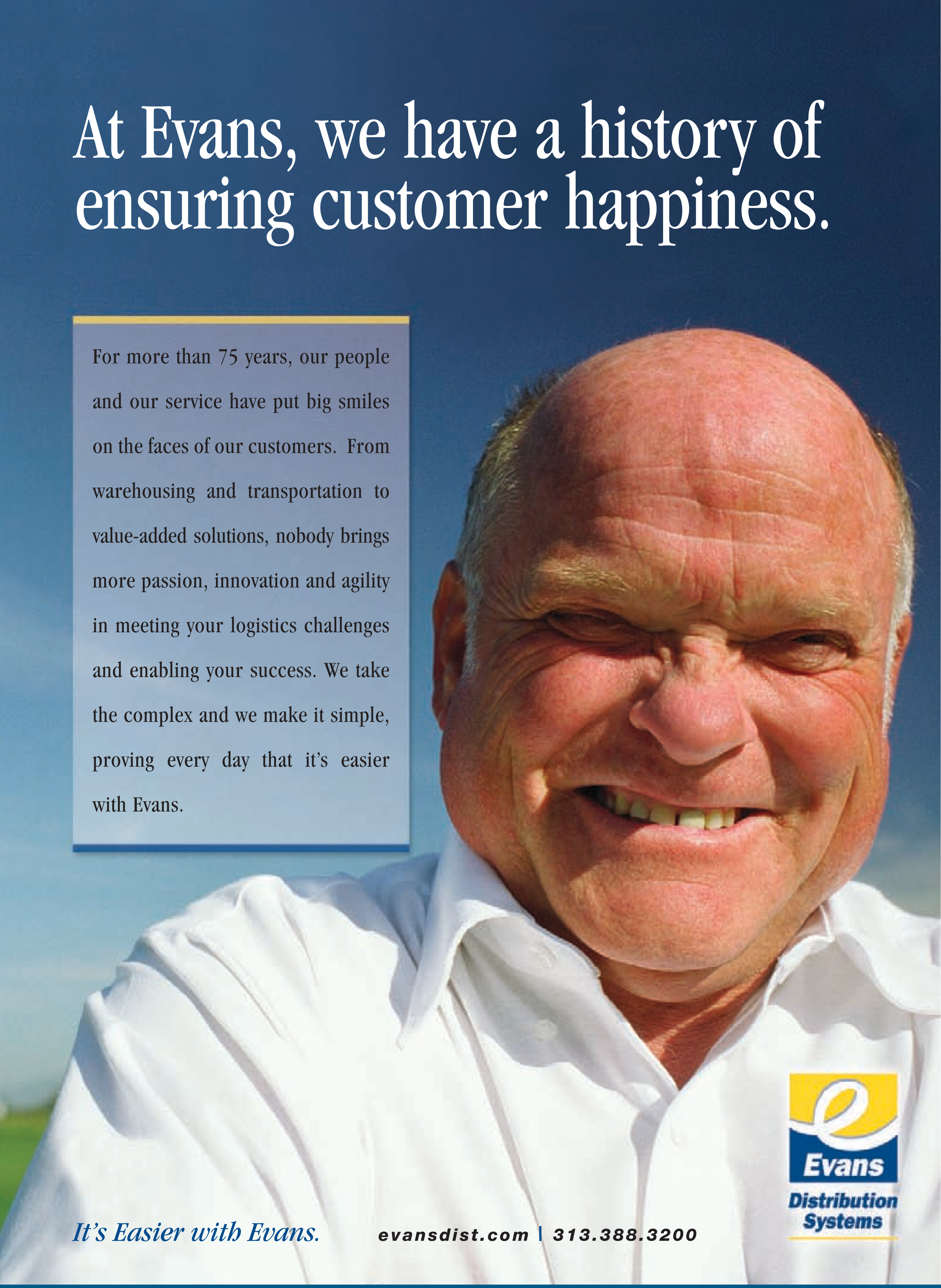
5,808 miles

There's nothing like taking a new car for its first big drive, a spin through the country.

When that spin spans two weeks, 6,000 miles, and 14 states, doing time, 24 hours at a time, is nothing short of exhilarating.

My destination was the Council of Supply Chain Management Professionals (CSCMP) annual conference in September 2010 in San Diego. This yearly agenda always includes a mad rush of meetings, seminars, and travel to and fro – then a period of decompression back in New York to digest notes and dispatch articles. But this year was different. I took my time getting there.

And that was the real learning experience. The questions that emerged while tailing trailer lights through an Indiana night were illuminated by insights shared around a San Diego conference room table – which only provided greater context and stoked more questions for the long haul home.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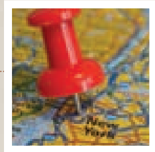


New York – San Diego

Cross-Country Running

Crossing the Delaware Water Gap Toll Bridge from New Jersey, then motoring along I-80 through Pennsylvania, is a six-hour lesson in avoiding a Catch-22 speed trap. The Keystone State is notorious for the number of troopers waiting in ambush to slap drivers with a ticket well north of $100. I learned my lesson a long time ago. Still, with a posted 65-mph speed limit through remote stretches of Pennsylvania Wild country, it's hard not to hold cruise control steady at 80–no less, no more. Otherwise you're either chasing traffic or being chased.

Outside Youngstown, Ohio, in a hallowed hamlet called Lordstown, I have reason to slow down as road construction and rain halt traffic. I catch a glimpse of a huge banner spanning the side of a massive industrial plant. It's General Motors' five-million-square-foot Lordstown automobile manufacturing complex. Even in a steady drizzle, the poster's message is loud and clear: *The Cruze is Coming.*

Ohio Gov. Ted Strickland celebrates the Chevy Cruze facility

For the 2,000-plus local autoworkers who lost their jobs at the plant in 2009, a consequence of the recession and GM's bankruptcy proceedings, the manufacturer's decision to locate production of the new Chevy Cruze at the Lordstown facility offers a small glimmer of optimism that the plant will remain operational–and that jobs might return.

Lordstown's parable illustrates how many Americans working in the automotive industry have been cast aside by economic attrition close to home and global competition farther afield. In the Rust Belt especially, the loss of manufacturing jobs has been swift and severe. GM is hanging its hat on the 40-mile-per-gallon Cruze sedan. Lordstown hangs its hopes on a banner that promises a second coming. (Inbound Logistics *Associate Editor Perry Trunick offers an inside look at how GM and its 3PL partner are working in concert at the Lordstown plant to make this hope a reality; see page 184*).

Back on the road, irony strikes 170 miles away when I pass a roadside sign in the middle of a sudden thunderstorm along I-70, just west of Columbus. It reads: *Crete Carriers: Drivers Wanted.*

Even as U.S. manufacturing dries up and sends jobs offshore, a void is growing on the trucking side of demand. If only carriers and shippers could so swiftly pass, and forget, this looming sign of things to come.

The driver shortage, largely smoke-screened by recessionary dips in demand, is resurfacing. In parts of rural America–such as Lordstown–where unemployment surpasses double digits, there is still work to be had.

Carriers are well aware of the problem and looking for ways to find, hire, and train a new generation of truckers, young and old. Shippers are equally mindful of how the Federal Motor Carrier Security Administration's Compliance, Safety, Accountability (CSA) 2010 initiative will impact the motor freight industry–especially when a lack of qualified drivers prevents truckers from adding necessary capacity.

Farther west along I-70 comes yet another plea for driver talent, this one placarded on the back of a GI Trucking trailer. The equipment may be dated but the message is fresh. Perhaps Estes Express is onto something by pairing "GI" equipment with a "for-hire" message.

Cross-Country Running

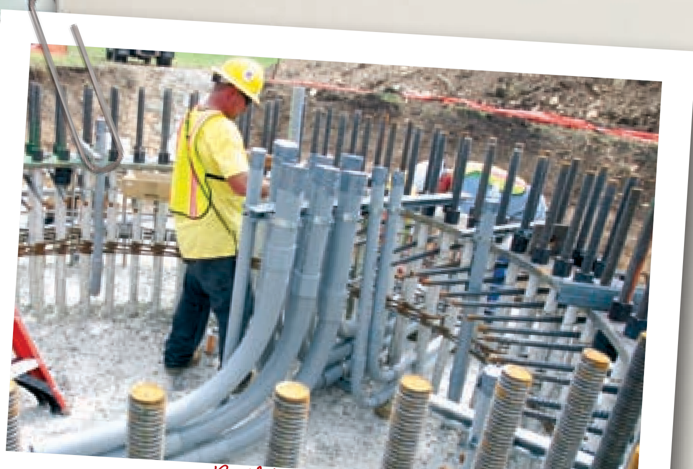
Moving along, as my miles-per-gallon dashboard digits drop to 26, I wonder if a Chevy Cruze might have been better purposed for this trip.

Gold Dust In the Wind

From 65 mph to 70, back to 65, then faster, I roll through Illinois farmland, cross the Mississippi, show Missouri my best effort, and pass into an old friend–Kansas.

A decade earlier, my friends and I, with Josie the dog in tow, motored through Kansas City, Mo., and Kansas City, Kansas, double-checking the road atlas and our geographic ignorance on a post-college exodus to Colorado. At the time, the only thing that made sense about Kansas was listening to *Dust in the Wind* on a cassette tape we picked up near the band's hometown of Topeka. From a driving perspective, not much has changed in 10 years. The wind blows and Kansas still sounds better than it looks.

But, for a moment, as I climb and drift across a rolling swell on I-70, a 21st-century dream passes before my eyes and raises a new curiosity. The sky is charcoal grey, gradually turning smoky. A looming thunderstorm is on the horizon, the kind that presses storm chasers to push the pedal and transients like me to feather the brakes. In a surreal moment, against a misty backdrop miles away, the visage of ivory-white turbines turning into a dark abyss is striking. I think, "This is what Sancho and Don Quixote got all bent out of shape about."



Building Smoky Hills Wind Farm

From I-70, the Smoky Hills Wind Farm stretches as far as the eye can see, turbines dotting the landscape, blades gently sweeping as wind gusts violently sway both my way and any confidence of better fuel economy. Located 20 miles west of Salina–in a place otherwise known as nowhere–the Smoky Hills development is managed by Italian subsidiary Enel North America, an owner and operator of renewable energy projects in 20 U.S. states and two Canadian provinces.

Turbines dot the Kansas landscape

Currently, the Smoky Hills development comprises two phases, the first of which became operational in 2008. With its second progression, the wind farm will total 351 megawatts of capacity, producing energy sufficient to power more than 85,000 households in the surrounding area.

Kansas isn't alone. Turning off Exit 164 on I-70 in Green River, Utah, an old camping oasis from my Colorado days, I meet a flatbed tractor swinging a wind blade with expert abandon onto a service road. Eastward along I-76 in northeast Colorado, then on I-80 through Nebraska and Iowa, I count no less than seven wind turbine caravans.

Trade Winds

Stuart, Iowa, catches my eye–a wind tower at Exit 93 bears the town's name in big, black, emboldened vertical letters, reminiscent of rural water towers that serve as welcoming beacons. Stuart residents are proud, and for good reason.

The town of 1,700 relies on its turbine to supply 11 percent of the community's power, including streetlights and municipal buildings. Stuart is among 33 municipal utilities in the state that operate a wind turbine or get power from wind energy. Iowa ranks third nationally in wind energy production, behind California and Texas.

For Midwest towns such as Stuart, where wind sweeps across farmland and trade winds arbitrarily carry global food prices in varying directions, renewable energy is a major source of sustainable growth. Many local farmers are looking at wind power as a new cash crop, a 365-day-a-year harvest without even the tilt of a plow–just tilting turbines.

New York – San Diego

Cross-Country Running

Driving along I-70 through the Midwest reveals more evidence of industry's swerve toward sustainability and fuel efficiency. Pull into any gas station and there sits the ubiquitous ethanol pump. More telling are the legions of trucks I easily pass with little acceleration. Many motor freight carriers are mandating drivers to stay below posted speed limits, thereby achieving better fuel economy and reducing wear and tear on engines with steadier speeds and less brakeage.

Elsewhere, long combination vehicles (LCVs), both doubles and triples, and truck trailers equipped with wind guards–notably Crete Carriers, R&M Transport, and Sunbury Transport–flash in and out of view. Sunbury draws my attention because I've never heard of it. Then again, I've never been to Moncton, New Brunswick, Canada, either–the company's headquarters.

The cross-border specialist operates a fleet of 300 canary yellow trucks–but it's green to the core. In 2007, Sunbury began equipping its LCVs with a number of aerodynamic devices, including gap fairings, trailer side skirts, and boat tails that reduce the effects of drag. It's currently piloting a number of other green-engine technologies, as well. These investments, combined with tandem trailer loads, are proving their worth.

Extended double trailers used to transport freight between Canada's Atlantic maritime provinces and Ontario provide savings of 28 million gallons of fuel and 297,000 tons of greenhouse gases annually, while reducing the number of trucks on the road by up to 10 percent, according to a two-year study conducted by Natural Resources Canada and the Canadian Trucking Alliance.

Pushing westward across the windy plains, it's easy to see why carriers such as Sunbury are retrofitting fleets and changing driver behavior to mitigate fuel use. There is every incentive to make good time traversing vast stretches of Big Sky country where the only thing limited is excitement. But it comes with a cost.

Four days of driving cross-country changed my perspective of the logistics sector.

Through the flats of eastern Colorado, accelerating and braking my way up into the Rockies, past places I used to call home, I try to convince myself that frequent fill-ups at familiar gas stops are a good excuse for nostalgia. Suffice to say, fuel expense is a real drag. And it only gets worse.

Coming down from the Colorado Rockies through Grand Junction into Utah, past Green River and the northern rim of the Canyonlands, travel time is fast. Long straightaways, light traffic, and ennui squeeze the pedal and siphon more fuel.

About 30 miles from where I-70 converges with I-15 in Cove Fort, Utah, I overtake a fast-spreading wildfire. A *Caution: Smoke-Fog Ahead* road sign trips my cruise control, and a firefighting chopper dangling a hose above turns my head awkwardly out the window. The wind's to blame, no doubt. The wildfire has plenty of fuel still to burn. So do I.

Fuel for Thought

Outside Las Vegas on I-15, gas prices hit a trip high at $3.11 a gallon; in New Jersey, when I began, I topped off at $2.35 a gallon. The premium on fuel prices in the western United States is noticeable. The reason is laden in smog and bureaucratic green tape–a California problem that has been widely publicized and equally influential among state environmentalists and legislators.

In 2009, Governor Schwarzenegger passed the country's first low-carbon fuel standard. The mandate requires fuel producers–blenders, refiners, and importers–to achieve emission reductions of 10 percent for their entire fuel mix by 2020, while allowing them to buy credits from producers of low-carbon

fuels. It's part of the state's landmark 2006 legislation, Assembly Bill 32–California Global Warming Solutions Act. Similar measures are under consideration in 13 other states, mostly in the northeast. A tighter market for cleaner burning fuels translates into higher gasoline and diesel prices.

As I run away from my fuel losses in Sin City, pass Zzyzx, Calif., with mild curiosity, and make my way across Mountain Pass into the Mojave Desert, then down through Baker and up through Barstow, I once again think fondly of the Chevy Cruze.

Two hours later, my reverie comes to a standstill, and reasoning takes over. I'm sitting in traffic outside Yermo, at an Agricultural Inspection Station. It's a minor hiccup in my schedule. But as I wait to be asked whether I'm ferrying any forbidden fruit or pest-infested plants into the San Bernardino Valley–I'm not, that I know of–it occurs to me that I'm contributing to California's pollution problem.

In fact, the California Department of Food and Agriculture was supposed to have moved the inspection center to the Nevada border in 2009. The station, which was built in the 1930s when there were no other major arteries through the area, has long since served its purpose.

Now, conditioned truck drivers take their trailers off the highway and onto side roads to skirt the delay–a big polluting problem for the local community. Those who don't know any better, like me, wait idly by, wondering how low-carbon emissions laws can so quickly pass judgment while highway bottlenecks get worse. At least my excess emissions have less carbon in them.

But California is making great strides in reducing congestion and increasing freight throughput at its ports by developing inland intermodal hubs like the one at the Southern California Logistics Airport in Victorville. Travelers need only follow railroad tracks and double-stacked container trains off the interstate to the former George Air Force Base, where $100 million has already been invested in transportation and distribution infrastructure–with more to come.

Crisscrossing freeways past the Los Angeles turnoff, I make the relatively short 90-mile journey south to San Diego, the site of CSCMP's 2010 conference.

On my downtown approach, it's hard not to feel a sense of accomplishment, and marvel at how four days of driving cross-country changed my perspective of the transportation and logistics sector, and strengthened my passion for what I do. What better way to see firsthand the topics of conversation sure to command attention today and tomorrow? And then be able to write about it.

It just takes a little time, and an endless tank of gas. ■

14-hour, 900-mile days, driving coast to coast alone through the heartland of America... listening to bluegrass, rock 'n' roll, Motown, and intermittent AM radio chat... watching the world pass by... stimulating the mind of a writer bound for San Diego in a four-cylinder Subaru, hauling a shifting load... of thoughts and ideas.

Detached, stream-of-conscious writing is the only way I can even try to summarize a fleeting experience bookmarked with permanent memories of places and perspectives, both new and old. Breathless? Yes. Priceless? No doubt.

Going, returning, in between – and now, in retrospect – I gained a greater appreciation for the daily challenges shippers and carriers encounter; and the tactics and technologies they use to bring the U.S. supply chain up to speed with shifts in supply and demand.

This odyssey was also a baptism by fire, kindled by a number of different revelations and perspectives about how industries and ideas are steering a new economy, as well as some of the challenges that lie ahead.

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ECONOMIC DEVELOPMENT OUTLOOK:

FOCUS ON 2011

By Amy Roach Partridge

Does lingering uncertainty about economic conditions, freight demands, and funding sources pose a threat to industrial real estate development and transportation infrastructure projects?

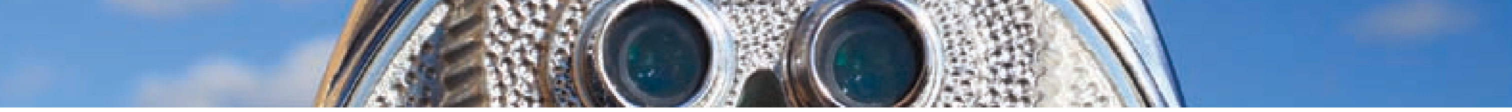
When the economy is stalled, "economic development" may sound like an oxymoron. But in fact, development and infrastructure projects at the local, state, and federal levels are forging ahead. Economic development organizations, government entities, public-private partnerships, real estate developers, and officials involved with all transportation modes are working together to keep development and improvements to the nation's transportation, distribution, and supply chain networks from falling prey to the recession.

Like all aspects of business today, economic development activities have felt the financial climate's pinch. Private developers have been challenged to find construction financing; projects developed with public funds are under greater government scrutiny; and companies skittish about the slow recovery of consumer spending have been reluctant to invest in new distribution centers or logistics facilities.

Uncle Sam, however, has pitched in. Though not lauded by all, federal stimulus programs aimed at investing in transportation infrastructure have helped jump-start some improvement projects. Awarded on a competitive basis for capital investments in surface transportation projects, the U.S. Department of Transportation's (DOT) Transportation Investment Generating Economic Recovery (TIGER) grants are a $2.1-billion source of funding that has affected all modes.

The Oregon International Port of Coos Bay, for example, received a TIGER grant to help rehabilitate and re-open a 133-mile rail line on the southern Oregon Coast. The refurbished tunnels, bridges, and track infrastructure on the line, which serves several lumber/plywood mills and will link to the national rail network at Eugene, Ore., are scheduled to re-open in June 2011.

The TIGER program has been through several phases and has support from some entities to become a permanent part of infrastructure development funding. "Programs such as TIGER are good vehicles for competitive, performance-based opportunities for infrastructure investment–both at the ports and for strengthening landside transportation connectivity," says Kurt Nagle, president of the American



Association of Port Authorities (AAPA).

Nagle is also encouraged by what he sees as "a more visible and vocalized bipartisan recognition of the need to improve our nation's infrastructure."

That increased awareness is certainly positive, but finding the appropriate level of federal investment and involvement is the tricky part. The lack of a long-term plan for reauthorizing the landmark 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) is troublesome as well, notes Joni Casey, president and CEO of the Intermodal Association of North America (IANA).

"The short-term extensions for surface transit reauthorization will not help achieve a sustainable transportation infrastructure funding program," Casey says. "We need to institutionalize some of the funding programs that have proven beneficial to the industry."

So while traditional government wrangling and the Great Recession's lingering hangover are hampering the frenzy of infrastructure and real estate development the logistics sector saw a few years ago, development continues at a moderate pace. What, then, can we expect to see in 2011 and beyond? Here is a closer look at major transportation and industrial real estate developments.

ROAD TRANSPORT SURGES

One of the biggest infrastructure and economic development drivers is the predicted growth of freight in the United States. While tepid consumer spending has temporarily dampened import and export volumes, the consensus within the industry is that this will soon change. The American Association of State Highway and Transportation Officials (AASHTO), for example, predicts that:

- By 2020, the U.S. trucking industry will move three billion more tons of freight than is hauled today. To meet this demand, the industry will put another 1.8 million trucks on the road.
- In 40 years, overall freight demand will double, from 15 billion tons today to 30 billion tons by 2050.
- Freight carried by trucks will increase 41 percent; by rail, 38 percent from today's volumes. The number of trucks on the road compared to today will also double.

If these numbers even come close to bearing out, the struggle for greater transportation capacity will become paramount.

"The transportation system that supports the movement of freight across America is facing a crisis," notes AASHTO's July 2010 report, *Unlocking Freight*. "Our highways, railroads, ports, waterways, and airports require investment well beyond current levels to maintain – much less improve – their performance."

Projects that help expand freight capacity are going strong. Various transportation corridors across the United States are continuing to bring together public and private entities in the name of highway infrastructure expansion and improvement. These include initiatives such as:

- **Ports-to-Plains Corridor:** The 2,300-mile collection of roadways runs from Mexico, through 10 states in North America's agricultural and energy center heartland, and into Canada.
- **I-39 Logistics Corridor:** Adjacent to Chicago, the corridor spans a 10,000-square-mile area encompassing two states and 14 counties.
- **North America's SuperCorridor Coalition (NASCO):** The multimodal transportation network traverses the heart of NAFTA trade and commerce territory in the United States, Canada, and Mexico.

Highway improvements and expansions in these corridors are designed to raise the efficiency, safety, and cost-effectiveness of freight transportation throughout North America. These types of initiatives score high ratings from groups such as AASHTO.

To further update over-the-road freight transportation, AASHTO advocates expanding the interstate highway system's capacity through improvements such as adding 32,000 lane-miles to the current interstate system and upgrading 14,000 lane-miles of the current national highway system to interstate standards. The group also believes in creating and funding a national freight program to include multi-state freight corridor organizations at the state, regional, and multi-state level.

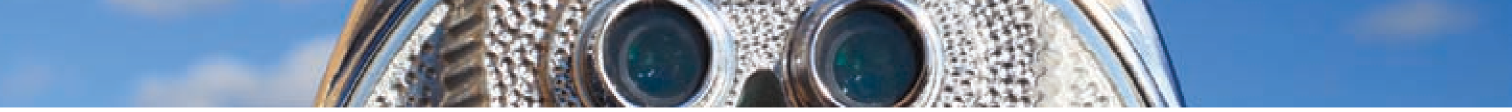
"The country has a lot at stake," says AASHTO Executive Director John Horsley. "Our national leaders must address the challenges ahead and fund the freight system capacity we need."

> "Our national leaders must address the challenges ahead and fund the freight system capacity we need."
>
> – **John Horsley,** AASHTO

PORT PREPARATIONS

2010 was a decent year for U.S. ports, as container traffic began to tick upward again. The Port of Los Angeles, for example, posted a 16-percent increase in container traffic in 2010, while U.S. ports overall have showed year-over-year improvement for 12 straight months, according to the National Retail Federation's monthly *Global Port Tracker* report.

Ports are getting ready to greet the increasing numbers of cargo ships. Despite the dip in commerce over the past few years, many U.S. ports have continued with ongoing infrastructure



improvement projects. The Port of Charleston, for example, is working on a 10-year, $1.3-billion capital improvement plan that includes constructing a new container terminal. Begun in 2007, the 280-acre terminal will boost the port's capacity by 50 percent. And the Port of Los Angeles is spending nearly $1 million a day on multi-year capital projects including terminal expansions, a street-widening project, and deepening its main channel.

"These projects take years to plan, develop, and construct, and will be in operation for 30 to 50 years," Nagle explains. "Ports look at the long term."

In anticipation of increased traffic, the Port of Los Angeles undertook capital projects that included expanding its terminals and deepening its main channel.

For many East Coast and Gulf Coast ports, the long-term view is driven by the Panama Canal expansion, slated for completion in 2014. The expansion will allow large, post-Panamax ships to pass through the Canal, making the all-water route from Asia through the Canal and into the U.S. East and Gulf coasts more popular–and potentially more lucrative for the ports that can accommodate the larger ships.

For that reason, the Port of Baltimore broke ground in March 2010 on a new 50-foot berth that will make it only the second U.S. port (in addition to the Port of Virginia) with enough water depth to dock the larger ships that will traverse the expanded Panama Canal.

"A new 50-foot berth is critical to the Port of Baltimore's future because it will help keep the business we have, and let us handle new business that will come aboard the larger ships," says Maryland Governor Martin O'Malley. The $105-million project is being funded by a private-public partnership between the Maryland Port Administration and Ports America Chesapeake.

U.S. ports are also juggling broader infrastructure issues such as ongoing maintenance and improvements to the federal navigation channels that lead into and out of the ports, as well as upgrades to land-side connections from the ports to rail lines and highways.

"Ports are challenged with making improvements inside their gates–which they usually have direct control over–and improving transportation connections, which usually involve partnerships at the federal and/or state level," Nagle notes.

RAIL ROLLS ON

During the past few years, U.S. rails have been on a spending spree, investing nearly $10 billion annually in capital expenditure since 2008. These huge infrastructure investments include upgrades to existing track, and adding new track, terminals, equipment, and maintenance facilities. As a result, rail carriers have continued to see steady freight volumes despite the rocky economy.

"Rail trends have been positive because the industry has invested in capital improvements," explains John T. Gray, senior vice president of the Association of American Railroads (AAR). "We have created the capacity to handle business efficiently while meeting customer service expectations."

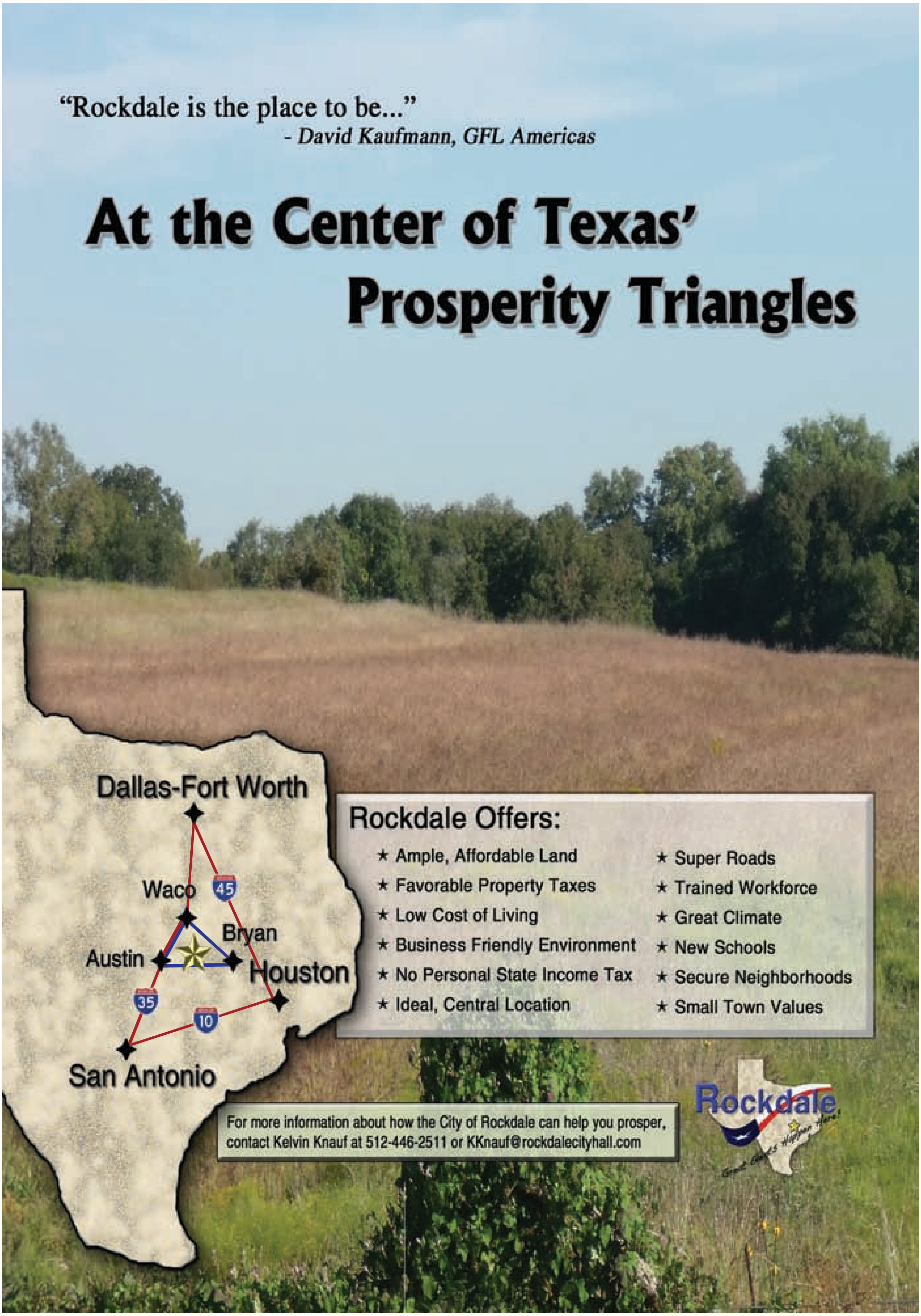
Rails have one big advantage over other modes when it comes to these infrastructure projects: they are privately funded. The amount of public money that gets into the rail system is minute–generally less than one percent of rail capital expenditures involve public funding.

GEARING UP FOR GROWTH

A slew of ongoing rail improvement projects is helping rail carriers prepare to meet the continuing demand for freight rail service throughout the country. In addition, regional rail projects such as The Chicago Region Environmental and Transportation Efficiency Program (CREATE) are having a significant national impact on freight transportation.

CREATE, which represents a unique mix of public-private organizations including the U.S. DOT, the State of Illinois, and the City of Chicago, as well as six of the nation's largest freight railroads, will invest billions in rail infrastructure improvements in the Chicago area. "CREATE is critical to the national freight rail network that will greatly improve efficiency and operability throughout the region," says AAR President and CEO Edward Hamberger.

By reducing the time rail traffic requires to transit Chicago, CREATE–which has received $100 million in TIGER funds–will improve nationwide freight flows, and help save shippers an estimated $40 million annually in reduced inventory costs.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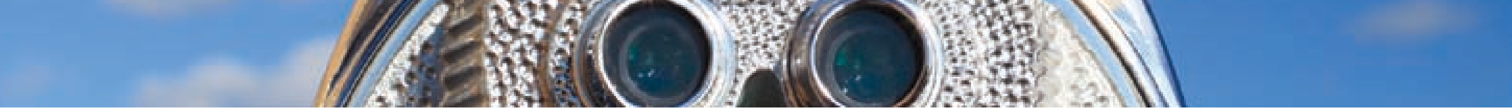


One obstacle potentially stands in the way of these continued infrastructure improvement projects: positive train control (PTC) systems, which are designed to increase rail safety by helping prevent train-to-train collisions and derailments. Class I railroads will be required to implement PTC systems over the next few years as a result of the 2008 Rail Safety Improvement Act, and the industry is worried that the expense will detract from rail carriers' ability to add capacity.

INTERMODAL IN DEMAND

Additional capacity is definitely an issue when it comes to intermodal transportation. Shippers are showing increased interest in intermodal, thanks in large part to concerns over increasing fuel prices and the desire to improve transportation and supply chain carbon footprints. Total intermodal volumes in 2010 are up 15 percent over 2009, and nearly back up to 2008 levels–an increase that IANA calls "encouraging."

"We have seen a measured increase in volume, with a resurgence in international traffic driven by import demand, as well as a steady increase in domestic container activity," says IANA spokesperson Tom Malloy, who predicts more of the same for 2011.

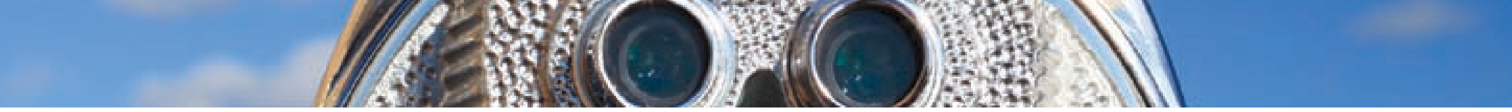
U.S. railroads are on a spending spree. Norfolk Southern, for instance, has invested in new intermodal terminals, rail route improvements, and signaling systems.

Not surprisingly then, intermodal facilities and rail corridors have been sprouting up around the country, and are a source of many large-scale economic development projects funded by partnerships involving rail carriers, private funding sources, and local, state, and federal government agencies.

"These corridor projects are aimed at increasing rail and intermodal capacity, shortening transit times, combating highway congestion, and responding to environmental concerns," says IANA's Casey, noting that many of today's projects are modeled after California's successful Alameda Corridor project, which helped to improve freight transportation into and out of the Ports of Los Angeles and Long Beach.

Examples of current ongoing public-private rail corridor investment partnerships include:

- **The Crescent Corridor:** This $2.5-billion Norfolk Southern initiative aims to establish an efficient, high-capacity intermodal freight rail route between the Gulf Coast and the Northeast. The project includes constructing new intermodal terminals and expanding existing intermodal facilities, as well as a host of infrastructure improvements along a 2,500-mile rail network. It also calls for adding freight rail capacity in Virginia and Mississippi, and investments in rail route improvements, signaling systems, and other track speed enhancements.
- **The Heartland Corridor:** Another Norfolk Southern project, the $150-million Heartland Corridor will create the shortest, fastest route for double-stacked



container trains moving between the Port of Virginia and the Midwest. At nearly 250 miles shorter than previous routings, the new routing will reduce transit time between Norfolk and Chicago from four days to three.

- **The National Gateway:** CSX Corporation's $842-million National Gateway project seeks to improve the flow of rail traffic nationwide by increasing the use of double-stack trains. Stretching from Northwest Ohio to Chambersburg, Pa., the project will address several key freight rail corridors that link Mid-Atlantic seaports and Midwest distribution points and population centers.

As many of these projects indicate, intermodal connectors are a vital aspect of intermodal transportation's future success, and securing funding for connector projects tops IANA's agenda.

"Intermodal connectors are the first and last highway segments going in and out of ports and intermodal facilities, and studies show they are the weakest link," says Casey. "This impacts global trade because it can adversely affect the connectivity of the highway system to import/export facilities."

Casey cites a newly announced intermodal connector project at the Port of New York/New Jersey as a step in the right direction. With nearly $65 million in funding, the project will upgrade three major roads at the agency's New Jersey marine terminals to increase cargo capacity and enhance safety. The upgrades will help relieve the bottlenecks and long waits endured by trucks entering and exiting the terminals.

"The more efficient we can make cargo movements through our ports, the better it is for our customers whose businesses depend on speed and reliability," says Chris Ward, executive director of the Port Authority of New York and New Jersey. "These major investments will help relieve traffic congestion and increase safety along some of our busiest roadways."

Intermodal's ability to meet increasing demand and serve shippers efficiently depends on the continued funding of these types of projects. But that, says Casey, is tough to rely on. "The wild card is where to secure the funding," she notes.

REAL ESTATE IMPACT

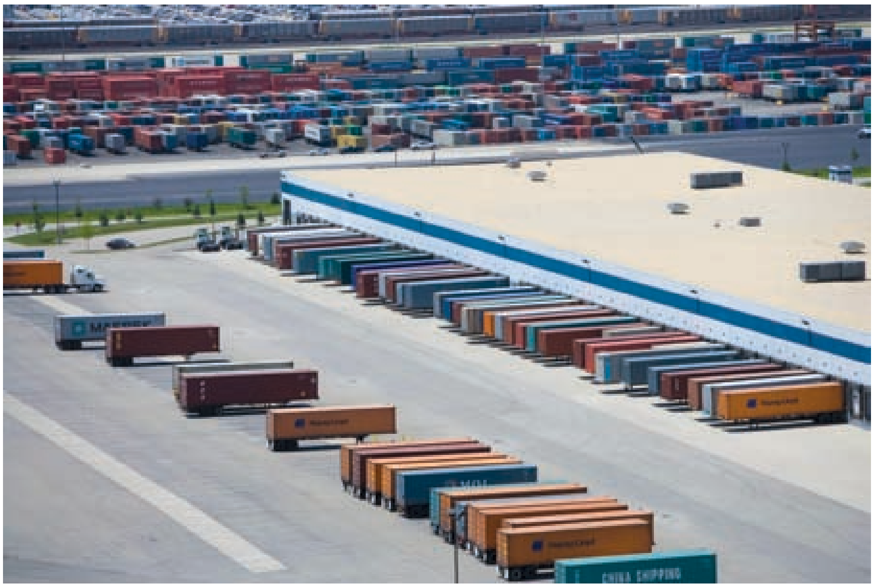
Not surprisingly, the challenges and opportunities currently facing the users and providers of our transportation and distribution systems–as well as the economic development investments and projects that serve them–are closely related to the state of industrial real estate.

"Industrial real estate is logistics-based at its core," says Neil Doyle, executive vice president, infrastructure and transportation for CenterPoint Properties, an Oakbrook, Ill.-based industrial real estate development company. "It's all about being located close to either the raw product or the finished product; the labor pool; or the consumers–one or all of the above."

The types of industrial real estate projects that are currently in favor reflect the nation's concern over energy prices, a drive for sustainability, weak consumer spending, and the move toward intermodal transportation.

"In 2008 and 2009, we experienced a drop in demand within our traditional industrial parks, but less so in our intermodal-based logistics parks," Doyle says. "Companies are looking for buildings that are close to rail and port terminals because they are trying to cut drayage and demurrage costs, and fuel consumption."

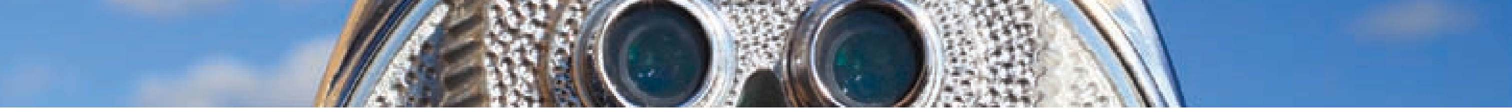
In tough times, he adds, many businesses focus on becoming more efficient, and have time to pay more attention to back-end operations like the supply chain. "When companies try to streamline and gain efficiencies, they look at intermodal transportation," Doyle says. "The whole theory of putting trucks on trains is about lowering fuel costs, being greener, and creating efficiencies."



While demand for space in traditional industrial parks has dropped, interest in intermodal-based logistics parks has remained steady.

CenterPoint recently expanded its intermodal center in Elwood, Ill., for example, from 3,000 acres to 6,000 acres and completed a facility for Union Pacific in the same park.

By contrast, building logistics and intermodal properties on speculation has come to a screeching halt, says Tim Feemster, senior vice president and director of global logistics for Grubb & Ellis. The spec boom of a few years ago created a glut in the market, driving average vacancy rates for industrial properties to 10.4 percent at the end of 2010, down 50 basis points from



its second-quarter peak. Continued unemployment and weak consumer spending are the culprits for these ongoing rates.

Vacancies vary wildly, however, depending on the market–the Los Angeles metro area stands at only 3.3 percent, while cities such as Boston, Atlanta, and Las Vegas are stuck with vacancy rates in the teens. Determining why can be tricky.

"Take Savannah, for instance," Doyle says. "The port is doing tremendously, but because the city was inundated with speculative construction for years, Savannah has a very high vacancy rate for industrial properties."

A BUYER'S MARKET

For developers, these circumstances all amount to one thing: the need to be flexible. Securing tenants for industrial properties today is far more complex than it used to be. "It is difficult to get traditional financing to construct a building if the tenants want a lot of flexibility in their leases," Doyle explains.

Shippers looking for industrial real estate are in the proverbial cat seat, then, with the ability to negotiate favorable terms. "Given the market conditions today, many companies are demanding benefits such as more sustainable buildings–especially when it comes to lighting and Energy Star HVAC systems," Feemster says. "Tenants expect a landlord to perform sustainability upgrades at no additional cost, and if the landlord isn't willing to, the tenant will cross that building off their list."

Such wrangling isn't necessarily the best long-term strategy, he notes. Shippers seeking logistics facilities should make sure the supply chain and real estate teams are working together to find the most strategic options for warehouse and distribution facilities.

Factors such as low rents, free rents, tax abatements, and incentives may make a property attractive, but if it does not meet supply chain needs, such as proximity to an intermodal site or airport, it is not the best choice. Paying higher rent at a building that leads to a more efficient supply chain is a better investment, because transportation costs consume more of a corporate budget than rents do.

"Locating a DC in an adjacent state because you can get \$2-per-square foot rent is not a great supply chain strategy if you then have to spend up to \$6 per square foot to bring in 15,000 international containers a year through an intermodal facility 150 miles away," Feemster notes.

As with all things supply chain-related, transportation costs are still the barometer by which all initiatives–economic development projects, infrastructure investments, and industrial real estate efforts–are measured. With so many factors at play affecting the logistics sector, 2011 is shaping up to be an interesting year. ■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ASK *the* (M)EXPERTS

For an update on what's new in security, infrastructure, and manufacturing in Mexico since last year's edition of *Ask the (M)experts, Inbound Logistics* checked in with a new crop of supply chain leaders and economic development experts—and some of last year's MVPs. ›››

(M)EXPERTS ASK *the*

Q How does Mexico compare to other global locations in competition for foreign direct investment (FDI)? What are its assets and obstacles?

GILBERTO SALINAS, VP, Brownsville, Texas Economic Development Council (BEDC): One of Mexico's most important assets in recruiting FDI is its proximity to the United States. Only one other country can claim that proximity. The country's affordable, young labor force is another asset.

JOHN LaRUE, Executive Director, Port Corpus Christi: Mexico's two ocean coasts and ample port infrastructure make it an ideal country for international trade companies to invest in infrastructure. Assets such as land and good roads exist close to every deepwater port. The biggest obstacles faced by foreign investors are the myriad government permits required to start a new business. Working with Mexico's bureaucracy can be time-consuming.

DANIEL PARDO, Country Manager for Mexico, DHL Supply Chain: Stable wages, a hardworking and highly skilled labor force, and robust relationships with long-standing trade partners are among Mexico's greatest assets. The country also offers friendly union relationships overall, including the ability to remain union-free.

Some challenges to address include road infrastructure efficiency, security, and regulatory frameworks, none of which are insurmountable. A more lasting challenge will be driving down transaction costs in comparison to other developed economies.

BOB COOK, President, El Paso Regional Economic Development Corporation: Mexico offers well-developed transportation infrastructure and a range of manufacturing support services. Mexico has historically offered globally competitive manufacturing costs, which are even more competitive in the current environment, with favorable changes in the exchange rate versus the dollar over the past two years.

TROY RYLEY, Managing Director, Transplace Mexico: Sourcing goods from Mexico allows companies to benefit from the low cost and flexibility of intermodal transportation and shorter shipping distances. With lead times ranging from 24 to 72 hours, Mexico presents a more palatable sourcing option than locations farther abroad. Companies can save up to 30 days in the forecasting cycle, allowing them to refine forecasts to be more in line with demand. They also gain more flexibility to react in real-time—canceling, increasing, and decreasing order capacity depending on market needs.

GUILLERMO CHAVEZ, Business Development Director, Meridian 100°: Proximity to the United States gives Mexico a clear competitive advantage. In 2010, trade to North America showed signs of revival after a very uncertain 2009. Major port operators and maritime companies have adjusted their forecasts and still project a monumental volume of goods heading to the North America trade bloc. Rising oil prices will make Mexico a desirable location to near-shore manufacturing or add specialized value to goods heading to the American and Latin-American markets.

MEET *the* (M)EXPERTS

Gilberto Salinas, vice president–marketing, communications and public affairs, Brownsville, Texas Economic Development Council

Salinas develops marketing campaigns to promote Brownsville, and recruit and expand industry in the region. He also assists in making incentive packages and suitable industrial sites available to companies expanding in the area. In his role as legislative affairs liaison, he ensures the community and its public projects are represented at the Texas Capitol.

John LaRue, executive director, Port Corpus Christi

LaRue oversees the port's day-to-day operations. He also serves as treasurer of the Port Industries of Corpus Christi; chairman of the International Refrigerated Transport Association; and chairman of the State of Texas Department of Transportation Port Advisory Committee.

ASK the (M)EXPERTS

Q What current developments, such as port, inland port, rail, and road projects, will affect trade in Mexico? Why are they significant, and what will be their impact?

SALINAS, BEDC: The most significant development is the widening of the Panama Canal. The expansion will provide both opportunity for ports along the Texas and Mexico Gulf Coast and stiff competition for ports along the Mexican Pacific Coast. The Port of Brownsville is investing in major infrastructure in anticipation of the influx of activity from the canal expansion, which is scheduled to be completed in 2014.

LARUE, Port Corpus Christi: Trade via rail and truck continues to grow between Mexico and the United States. Kansas City Southern de Mexico and Ferromex have developed inland hubs/ports in various Mexican states for container operations. In addition, to reduce heavy truck congestion on the border, investing firms are seeking construction of another bridge crossing, as well as free trade zone facilities on both sides of the border.

CHAVEZ, Meridian 100°: Metropolitan areas will be better connected by 2012. For example, the North Arc highway, which already serves as a Mexico City bypass, will eventually link the states in the center of Mexico. New highway development has given more viability to several industrial parks that are now under construction.

Other important investments are being deployed in the Pacific in the Port of Lázaro Cárdenas. In addition to its container terminal, the port will create a new rail facility. Mexico will benefit from the increase of trade to the North America bloc if it is capable of providing world-class port and transportation infrastructure, which will attract major global port operators and create a healthy competitive climate.

Photo Courtesy of DHL

Ports along the Texas and Mexico Gulf Coast are enhancing their infrastructure and upgrading equipment in anticipation of increased container volumes.

MEET the (M)EXPERTS

Daniel Pardo, country manager for Mexico, DHL Supply Chain

Daniel Pardo has been with DHL Supply Chain for 17 years. In 2003, he led the integration of operations with Tibbet & Britten at DHL Supply Chain, which represented business growth in Mexico of more than 100 percent. Since 2006, he has been vice president and director general of supply chain for DHL Supply Chain in Mexico, responsible for operational, administrative, and business growth.

Bob Cook, president, El Paso Regional Economic Development Corporation (REDCo)

REDCo is responsible for recruiting business and industry to the Greater El Paso/Juarez region. Cook and his staff have teamed with regional partners to recruit several noted businesses to the region since REDCo's inception in June 2004.

What are the growth opportunities for FDI and trade as a result of the growing Mexican consumer class?

SALINAS, BEDC: The Mexican consumer class has come a long way, but it is still at least a generation away from making any significant strides in regards to foreign direct investment. U.S. and European manufacturers continue to be the major draw for foreign direct investment activity in Mexico.

PARDO, DHL Supply Chain: The Mexican consumer is getting more sophisticated and demanding. Disposable income spending patterns have shifted, most noticeably in consumer goods such as electronics, mobile phones, and automobiles; and services such as banking, food, and leisure. Mexican consumers tend to be more loyal than their developed country counterparts, so partnering with established brand names looking to innovate and stay ahead of the curve is a good idea.

On the other hand, and contrary to the economic law of one price, a surprising percentage of the goods desirable to the 'new' Mexican consumer are still considered, taxed, and marked up as luxury items or services. This gives higher margins to companies that can offer what the consumers want.

There is strong growth potential for industries with labor-intensive processes and specialized labor needs, including food and consumer goods companies' inbound and outbound supply chains.

COOK, REDCo: Mexico has not experienced the mortgage/debt crisis that has hampered the U.S. economy. With more than half of its population younger than 30 years old, the country has a strong and growing internal market. The Mexican banking system is solid, with more than $100 billion in reserve, and a current per-capita income of approximately $8,000 and growing. Like any emerging economy, Mexico provides solid opportunities for both FDI and trade.

RYLEY, Transplace Mexico: Over the past 10 years, the Mexican middle class has gained access to conventional consumer credit, which has changed the dynamics of their purchasing habits tremendously. This increased spending is evidenced by the presence of new cars and housing developments, and the large selection of global products from both U.S. and Mexican retailers in the stores.

CHAVEZ, Meridian 100°: FDI can be beneficially allocated in areas such as logistics and industrial facilities. Mexico has three major cities and more than 50 metropolitan areas, so local and regional distribution and manufacturing centers will be needed, as well as infrastructure improvements. Transportation companies and 3PLs can also reinforce their global transportation strategies in Mexico.

The aeronautics and automobile industries in Mexico benefit from the country's skilled workforce and business conditions favorable to specialized industries.

Finally, the rise of metropolitan areas such as Queretaro and Aguascalientes creates potential for developing services related-facilities, from call centers to software development.

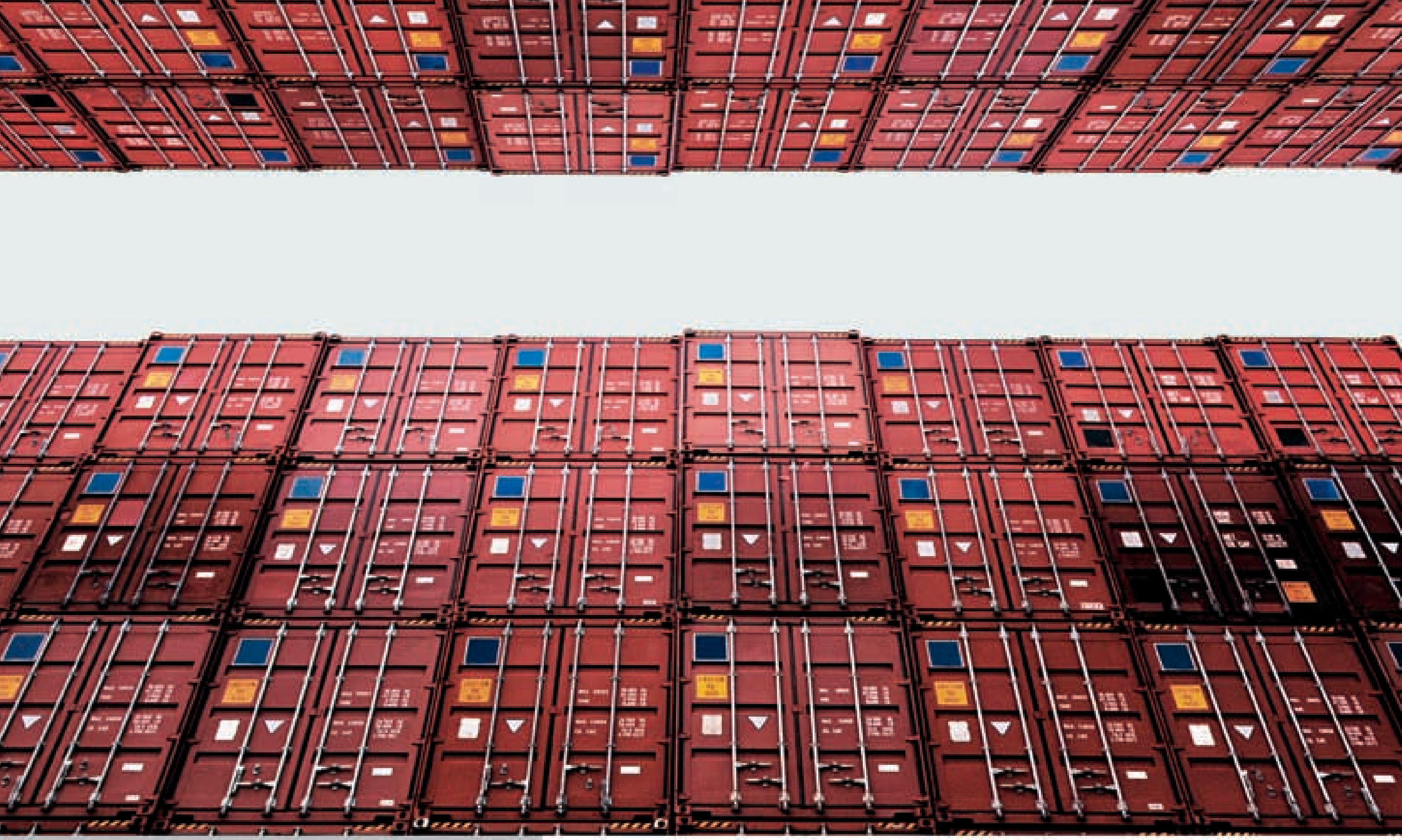
MEET the (M)EXPERTS

Guillermo Chavez, Business Development Director, Meridian 100°

Chavez's experience lies in new venture creation and business model strategy. He has been instrumental in developing Meridian 100°'s value proposition, identification, and coordination of strategic advisors. Meridian 100° is a privately owned, Mexico-based logistics infrastructure developer.

Troy Ryley, managing director, Transplace Mexico

Ryley has been involved in Mexico and Latin America logistics since 1993. After graduating with his MBA from The American Graduate School of International Business (Thunderbird), he relocated to Mexico City, where he worked and lived for more than 12 years. He is responsible for directing and managing Transplace's logistics operations for Mexico and the southern U.S. border.



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What is the status of cross-border security in Mexico? Have government programs to combat crime been effective? Do you predict crime rates will rise or drop over the next five years?

LARUE, Port Corpus Christi: To enhance security around the border, the government has established Federal Police and Army checkpoints, which have been somewhat effective. Customs officials also have screening systems to check trailers and railcars moving in both directions across the border. With U.S. and Mexico authorities working together, crime rates should continue to drop over the next five years.

COOK, El Paso: Cartel-related violence has increased in Mexico over the past 36 months, but it has had little direct impact on the country's manufacturing and distribution sector. Manufacturing jobs in Ciudad Juarez have increased by 22,000 over the past 16 months, and the volume of manufacturing-related import/export trade in our region increased by 56 percent during the first three quarters of 2010, compared to the same period last year.

We hope that the new strategies being implemented by local and state governments, along with assistance provided by the U.S. government, will reduce the incidents of violent crime over the next few months, and certainly within the next five years.

Photo by Gerald L. Nino

U.S. Customs and Border Protection coordinates with Mexico's authorities to patrol the border's waterways in an effort to curb drug trafficking.

RYLEY, Transplace Mexico: While Mexico's security issues are far from resolved, recent meetings with Homeland Security have helped improve the situation, and collaboration between Mexico and the United States is at an all-time high. The recent capture of noted crime figures, including La Barbie and members of La Familia, has impacted the drug cartels' effectiveness. There are more roadside checks, and the Mexican government is breaking seals in more locations to look for drugs and arms in shipments moving across the border. The cartel problems, however, will continue to affect trade and merchandise security through the next few years, and the increased security efforts have come at a great cost to the country's current economic strategy.

CHAVEZ, Meridian 100°: The Mexican government's decision to confront drug dealers proved to be effective in curbing the rise of illegal drugs in the United States, but the increased violence between cartels has been a negative consequence. Nonetheless, business continues in Mexico and along the border, as the world's most important and admired companies import and/or manufacture goods in Mexico.

Q Given the United States' recent elections and Mexico's upcoming elections, what are the prospects for closer cooperation between the two governments?

LARUE, Port Corpus Christi: Historically, and independently of who will be the next president in Mexico or the United States, cooperation between both countries' governments has been cordial. Mexico is one of the United States' largest global partners for trade and development. That relationship should continue for the foreseeable future.

PARDO, DHL Supply Chain: NAFTA countries depend on each other for diverse factors, such as raw materials, hourly labor, engineering, manufacturing best practices, management skills, and expansion into new markets. A few chapters of NAFTA have not been realized, and they need to be reviewed with a holistic, global view to determine how to generate a win-win situation for both countries.

The United States and Mexico will do well to recognize that partnership is not only natural but necessary to thrive as part of the 'new normal,' and that it is a key way to maintain a strong presence in their respective arenas. Stronger links between diplomacy, industry, and government will need to be formed in order to align the wills and the spirits of both populations.

After the countries achieve this stability, cooperation will flow in five key streams: more efficient regulatory frameworks, simplification of trade terms with a focus on the real goals, elimination of infrastructure bottlenecks, bilateral capacity planning, and the creation of geographic industry clusters that work in unison to enhance each country's competitiveness. That said, cooperation between immediate neighbors is seldom automatic—it requires strong leaders and a concerted, cohesive effort.

COOK, REDCo: The United States and Mexico share a common border of more than 2,000 miles, and our countries have common interests relating to economic, social, and security issues, which necessitates collaboration on trade and immigration. For example, in the U.S. government, new U.S. Customs and Border Protection Commissioner Alan Bersin is spearheading initiatives at the ports of entry along the southwest border, which should increase security while enhancing the flow of commerce and people with legitimate business purposes.

RYLEY, Transplace Mexico: For the past decade, there has been tremendous interest and support for developing bilateral government programs and trade pacts between the United States and Mexico. Because Mexico is our closest neighbor on the southern border, it serves our interest to continue to have close ties and increased cooperation and trade between the two countries.

A Global Player

Mexico's economy ranks as the world's 12th largest. The following statistics help bring the country's role in global trade into focus.

80 percent of Mexico's international trade is with the United States.

In 2009, the United States and Mexico conducted an estimated **$305.5 billion** in trade; for the first 10 months of 2010, their trade was worth **$322 billion.**

Mexico is the United States' **third-largest trading partner**—ranking only behind Canada and China—making up **12.3 percent** of all U.S. trade.

In 2009, 23 U.S. states exported **$1 billion or more** in products and services to Mexico, creating thousands of jobs in each state.

Source: Bob Cook, El Paso Regional Economic Development Corporation

Q What role can Mexico play in helping multinational companies expand their opportunities throughout Latin America?

LaRUE, Port Corpus Christi: Mexico's economy and finances are strong, its import and export trade is balanced, and the peso has maintained its value for the past five years. The country is well-positioned to serve as a hub for multinational corporations, which can expand with Spanish-speaking personnel who are attuned to the Latin way of doing business.

PARDO, DHL Supply Chain: Mexico is an ideal pilot environment where companies can easily learn consumption patterns and spending behavior representative of the entire region. Its cultural and geographical proximity to the United States allows companies to set up competence centers where products can be customized for Latin America, and manufacturing innovations can easily be replicated from an origination country into Mexico. The country's world-class education institutions produce workers with a unique pool of skills and creativity who are suited for successful deployment across the region.

CHAVEZ, Meridian 100°: As the North American trade bloc remains the biggest consumer market in the world, Mexico will become the logistics hub for trade heading to North America from southeast Asia, South America, and Europe. Latin American countries producing goods in Mexico can benefit from its diverse commercial agreements and foreign trade zones.

Q Have recent rail infrastructure investments been adequate? What further development is needed?

LaRUE, Port Corpus Christi: All the rail companies operating in Mexico have invested billions of dollars in track upgrades, tunnel expansions, and inland hubs to enhance their logistics operations and save freight costs for local clients. But because of increases in container trade and general/bulk cargo volumes, additional infrastructure is still required.

PARDO, DHL Supply Chain: Infrastructure and service offerings have improved, but there are still areas of opportunity in the amount of volume that could be handled via rail. Much more needs to be done to increase rail capacity and use.

COOK, REDCo: Privatization of the country's three principal corridors linking to the United States significantly improved their efficiency, which increased use of the system. There has been about $4 billion invested in rail upgrades, split almost evenly between Mexico's public and private sectors.

RYLEY, Transplace Mexico: Although there have been improvements in the Mexican rail system, it still lacks the agility that we are accustomed to in the United States. And in many cases, rail is more expensive than over-the-road truck for short and mid-distance hauls.

Kansas City Southern has improved some lines of service, but even with its significant investments, Mexico's rail infrastructure needs improvement to make it as competitive as other countries' systems. ■

Investments by Kansas City Southern de Mexico have helped improve Mexico's rail infrastructure.

Kansas City Southern de Mexico

MID-ATLANTIC PORTS

The Heartland Express

Geographically positioned in the epicenter of the Eastern seaboard, the U.S. Mid-Atlantic region serves as a direct arterial link into the heart of the country. With historical trade ties to Europe and emerging connections with Asia via both the Suez and Panama canals, ports in the region are pulling up anchors to steam forward with shifting trade currents and demand.

The Panama Canal expansion, targeted to be complete in 2014, will bring larger ocean lines to Mid-Atlantic ports. Norfolk and Baltimore are the only U.S. East Coast ports with sufficient channel depth to allow for "Pana-maxed" ships. The Port of Wilmington, N.C., also anticipates increased traffic and has invested capital in new Panamax container cranes and support equipment to manage growing volumes.

To help accommodate this expected trade surge, ports are linking up with the railroads to quickly redistribute freight inland via two intermodal corridors. Norfolk Southern and CSX Transportation, two Class I railroads serving the region, have developed the Heartland Corridor and National Gateway projects, respectively, to facilitate more efficient rail transport between the Mid-Atlantic ports.

The Heartland Corridor connects Norfolk's port terminals with Chicago and Columbus, Ohio. The National Gateway links Mid-Atlantic ports, including Baltimore and Wilmington, N.C., with the Midwest.

These improvement efforts aim to raise vertical bridge and tunnel clearance to allow passage of double-stacked intermodal trains, which will augment capacity, increase throughput, and offer shippers yet another reason to consider the Mid-Atlantic a preferred heartland gateway.

The four ports profiled on the following pages represent just a few of the Mid-Atlantic region's highlights.

Port of Wilmington, N.C.

PORT OF NORFOLK, VIRGINIA

www.portofvirginia.com

Main Channel Depth: 50 feet

ANNUAL TRADE DATA

Vessel Calls: 2,926
TEUs: 1.8 million
Imports: 826,834 TEUs
Exports: 929,732 TEUs
Total Tonnage: 51.3 million tons

CARGO FACILITIES & TRANSPORTATION ACCESSIBILITY

- Located on more than 647 acres in the Hampton Roads harbor area
- 14 cranes offer 245-foot reach to offload ships loaded 27-containers wide
- Five berths totaling more than 5,500 feet; three finger piers; a Ro/Ro berth
- 89,300 feet of direct rail access
- Storage space for 34,200 TEUs
- 54 acres of covered pier and dry and cold storage
- 10,000-acre FTZ

TRADE PARTNERS

- Brazil
- The Netherlands
- Colombia
- France
- China
- India
- Germany
- Canada
- United Kingdom
- Italy

COMMODITIES

Inbound:
- Mineral fuel and oil
- Beverages
- Machinery
- Wood
- Furniture
- Fertilizers

Outbound:
- Mineral fuel and oil
- Grain, seed, fruit
- Cereals
- Animal feed
- Woodpulp
- Paper

PORT OF WILMINGTON, DELAWARE

www.portofwilmington.com

Main Channel Depth: 35-40 feet

ANNUAL TRADE DATA

Vessel Calls: 359
TEUs: 259,964
Imports: 2,089,054 tons
Exports: 652,709 tons
Total Tonnage: 4,149,763 tons

TRADE PARTNERS

- Honduras
- Costa Rica
- Guatemala
- Ecuador
- Chile
- Argentina
- United Kingdom
- Brazil
- Sweden
- Belize

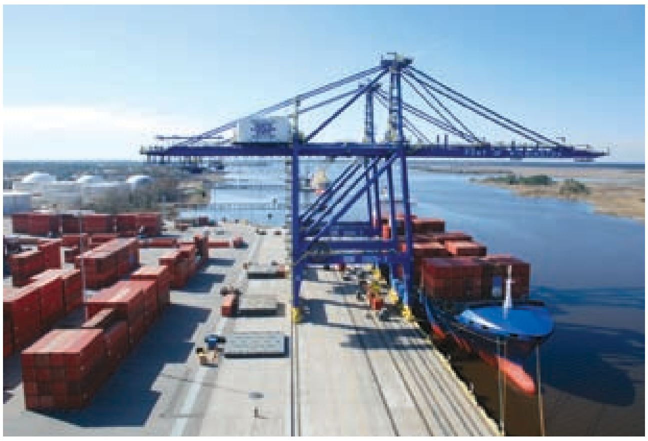
CARGO FACILITIES & TRANSPORTATION ACCESSIBILITY

- Located at the confluence of the Delaware and Christina Rivers; closest Delaware River port to the Atlantic Ocean
- Seven deepwater general cargo berths, a floating berth for juice tankers, and an oil tanker jetty on the Christina River
- An auto and Ro/Ro dock on the Delaware River for pure car/truck carriers, with a dedicated roadway to vehicle storage and processing facilities
- Two 50-ton multi-purpose gantry cranes, with a maximum lifting capacity of 75 tons. A new Gottwald 100-ton multi-purpose mobile harbor crane is scheduled for delivery in early 2011

COMMODITIES

Inbound:
- Fruit and juice concentrates
- Wind turbine components
- Various types of bulk and specialty ores

Outbound:
- Automobiles and high and heavy pieces
- Steel and ferrous scrap
- Petrol coke, coal and sand
- Livestock



PORT OF WILMINGTON, N.C.

www.ncports.com

Main Channel Depth: 40 feet

ANNUAL TRADE DATA

Vessel Calls: 442

TEUs: 243,019

Imports: 109,287 TEUs

Exports: 90,050 TEUs

Total Tonnage: 3.4 million tons

CARGO FACILITIES & TRANSPORTATION ACCESSIBILITY

- Located 26 miles from open sea on the Cape Fear River
- Nine berths with 6,768 feet of wharf frontage
- Open-storage dry bulk facilities that can transfer up to 800 tons per hour
- Covered dry bulk facilities with import conveyor systems for grain and other bulk cargo, capable of handling up to 1,000 tons per hour
- Post-Panamax container cranes and support equipment
- One million square feet of covered and sprinklered warehouse space

COMMODITIES

INBOUND:

- Chemicals
- Grains
- Cement
- Metal products
- Machinery parts

OUTBOUND:

- Forest products
- Woodpulp
- General merchandise
- Food products
- Woodchips

TRADE PARTNERS

- Turkey
- Honduras
- United Kingdom
- Belgium
- Taiwan
- Colombia
- Brazil
- China
- Korea
- Great Britain

PORT OF BALTIMORE

www.mpa.maryland.gov

Main Channel Depth: 50 feet

ANNUAL TRADE DATA

TEUs: 395,219

Imports: 12.1 million tons

Exports: 10.2 million tons

Total Tonnage: 22.4 million tons

TRADE PARTNERS

- The Netherlands
- Canada
- China
- Brazil
- Korea
- Portugal
- Trinidad and Tobago
- Japan
- Russia

CARGO FACILITIES & TRANSPORTATION ACCESSIBILITY

- Covers 278 acres above the Chesapeake Bay at the head of the Patapsco River Estuary
- Seagirt Marine Terminal has three berths for vessels and one for barges, 112 reefer outlets, and direct rail connections serviced by CSX Transportation
- Dundalk Marine Terminal handles containers, automobiles, breakbulk, Ro/Ro cargo, and forest products, with 13 berths
- Fairfield and Masonville Marine Terminals specialize in automobiles
- South Locust Point Marine Terminal is a multi-use facility specializing in breakbulk and Ro/Ro forest product cargo
- The North Locust Point Marine Terminal in the Port of Baltimore is a multi-use facility specializing in breakbulk, liquid bulk, Ro/Ro, and containerized cargoes

COMMODITIES

INBOUND:

- General cargo
- Liquefied natural gas
- Salt
- Oil (not crude)
- Iron ore
- Gypsum
- Sugar
- Coal

OUTBOUND:

- Coal
- General cargo
- Metal waste and scrap
- Oil (not crude)
- Cereals, oil seeds, and animal feed
- Mineral fuel and asphalt
- Wood

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FACING LOGISTICS CHALLENGES? USE IL'S 3PL EXPERTS AND

DC Solutions | by Lisa Terry

Unleashing Logistics Excellence

Dogged pursuit of supply chain and warehousing efficiency led pet food manufacturer WellPet to partner with two 3PLs.

Natural pet products company WellPet describes its approach to pet nutrition as "passionately picky." The Tewksbury, Mass.-based manufacturer selects nature's finest ingredients and combines them in exact proportions to support pet health and well-being. So it's no surprise that the company brings those same high standards to logistics.

WellPet traces its roots to A. Hubbard and Sons bakery in Gloucester, Mass., makers of hard tack sea biscuits. One day in 1921, a local sailor threw a biscuit to his dog, who happily gobbled it up, and soon the Old Mother Hubbard pet biscuit company was born. In the 1960s the brand went all natural, and in the 1990s a team of animal nutrition experts, veterinarians, and scientists took it to the next level by using only carefully selected, authentic ingredients from trustworthy sources with an ideal nutritional balance.

Today, WellPet offers four premium pet food brands: Wellness, Old Mother Hubbard, Holistic Select, and Eagle Pack. Customers range from veterinary offices and boutiques to large national pet specialty retailers including Petco and PetSmart.

As WellPet embraced its core competency as a maker of nutritionally sound dog and cat food, the company also acknowledged that logistics was not its focus. "We recognized years ago that a lot of work goes into logistics management, and as a small company we could not do it all," says Beth Wilson, WellPet's vice president of operations. "We saw an opportunity to shift logistics to the experts."

TAKING STOCK

Because of the exacting nature of high-end pet food requirements, WellPet had to carefully select its third-party logistics provider (3PL). Pet food distribution facilities must comply with the same stringent sanitation standards as those for human food. The perishability of natural foods means shelf life is short–usually less than 12 months. Precise inventory tracking is essential to accommodate first-in, first-out (FIFO) requirements.

After completing its selection process, WellPet began outsourcing its Wellness and Old Mother Hubbard distribution to two 3PLs. In 2002, the firm contracted with Temecula, Calif.-based Aspen Logistics to service its West Coast customers, and, in 2004, it added Kane Is Able, Scranton, Pa., to manage East Coast distribution. Logistics operations for Holistic Select and Eagle Pack, added through a recent merger, are handled in-house.

IN GOOD HANDS

"Pet food is a key market for us, and one we've been serving for decades," says Jim Emmerling, executive vice president, Aspen Logistics.

Aspen is a woman-owned business with revenues of approximately $60 million. Employing more than 600 workers, the 3PL provides warehousing, distribution, transportation, and value-added supply chain services.

Kane Is Able, founded in 1930, offers integrated warehousing, packaging, and transportation services designed to meet the needs of consumer packaged goods (CPG) manufacturers.

The 3PLs' experience meant both providers were already well-equipped to meet WellPet's needs. But it's the work the companies have done together since then that has helped WellPet go above and beyond customer expectations. Thanks in part to this collaboration, WellPet was named 2009 and 2010 Supplier of the Year by the Pet Industry Distributors Association.

Aspen's Salt Lake City distribution center receives product daily from WellPet's nearby manufacturing facility, then enters those shipments and lot codes into its warehouse management system. WellPet sends more than 300 stockkeeping units via electronic data interchange, which Aspen picks and stages for shipment. More than one-third of WellPet's orders are case picks.

Recently, Aspen took over tendering loads to carriers, and the 3PL also helps manage inbound transportation from WellPet's manufacturing partners. Other innovations Aspen developed for WellPet include:

Aspen Logistics' Salt Lake City distribution center receives WellPet product from nearby manufacturing facilities.

- **Lot Control System:** Prior to outsourcing, WellPet tracked lot codes and expiration dates manually. "Warehouse workers wrote down lot codes and made sure inventory was rotated," says Curtis Mendes, WellPet logistics manager. Aspen automated the process so inventory always rotates according to FIFO, and can even ensure that a specific customer receives a specific lot.

"We can virtually guarantee that customers receive product in the freshness sequence that WellPet requires," says Emmerling. WellPet maintains dedicated quality control managers at its 3PLs for ongoing quality assurance.

- **Inventory Accuracy:** WellPet customers range from small vet offices to large pet specialty retailers, requiring not only the ability to ship everything from a small carton-level order split among locations to multiple pallets bound for retail DCs, but also to track lot codes down to those small levels. That capability allows WellPet visibility into exactly which lots went to each customer. The information helps satisfy customer inquiries.

WellPet's stringent inventory and order accuracy ratings are based not just on quantities, but on formulas that include data coding, the number of daily shipments, cases picked, inventory turns, and on-time deliveries. Aspen's WellPet inventory accuracy is 99.99 percent, and its order accuracy is 99.8 percent.

- **Rapid CFIA Compliance:** When the Canadian Food Inspection Agency (CFIA) implemented new requirements, "Aspen worked with us to incorporate a manufacturer code into the lot code and helped us secure the required documentation to go along with the code," says Mendes.

The 3PL continued tweaking the solution as the regulations evolved. "Canadian customers tell us we were one of the few providers who were up to date," Mendes notes. "Other suppliers struggled and were not able to get product into Canada."

- **Customer Portal:** Visibility is a priority for WellPet. Aspen maintains an in-house IT staff to develop customer solutions, including a portal that allows WellPet to view real-time data such as lot codes, quantities, damages, product rotation, and historical data.

"WellPet can track shipments through every step in the process," says Garry Barfus, general manager of Aspen's Salt

Lake City facility.

■ Packaging Assistance: "WellPet's product packaging is vivid and unique for the pet food industry," says Emmerling. "We take great care to ensure the package is protected during transportation."

Aspen experimented until it found the ideal pallet configuration and wrapping technique for WellPet's products. "And when we launch a new product, Aspen tests handling it in the warehouse and provides feedback," says Mendes.

KEEPING IN TOUCH

Maintaining successful 3PL partnerships requires attention. WellPet meets with both Aspen and Kane for quarterly business reviews, covering an agenda that includes performance metrics, business strategy, new opportunities, promotional plans, and forecasts. Such open data sharing is a rarity among 3PLs and their customers.

When WellPet sent Mendes on a series of visits to customer sites, managers from both Aspen and Kane accompanied him. This is an unusual practice, because many shippers are reluctant to encourage direct contact between their 3PLs and their customers.

"We were able to improve processes and best practices," says Wilson. "And the visits were well-received by our customers. That kind of relationship-building is critical to success."

Following up on that initiative, Aspen began attaching a survey to each shipment, asking customers to rate the load. The effort generated both positive and negative feedback, helping the 3PL to not only fine-tune shipping processes, but also impress customers with its dedication to continual improvement.

MOVING FORWARD

Close 3PL relationships will be essential as WellPet continues growing.

"Our focus this year is on metrics and scorecards received from customers," says Wilson. "It's more important than ever to perform consistently and continue to provide high service levels as we grow."

Wilson credits its strong 3PL relationships with helping the company earn the business of large national retail chains and glean best practices for distribution tasks it performs in-house.

"Because we share information, we're able to customize tools to come up with a portfolio that's meaningful to WellPet," adds Emmerling.

WellPet's relationships with its third-party logistics providers "gives us an extremely high comfort level," says Wilson. "We feel confident about how our product is being handled, shipped, and received.

"Our customers have come to realize that both Aspen and Kane offer world-class facilities," she adds. "They know they will receive our product accurately, on time, and as expected." ■

TRUCKING

Old Dominion Freight Line

A new 10-door service center near Casper, Wyo., expands Old Dominion's direct less-than-truckload coverage of the state to 95 percent. A terminal manager, a sales representative, and five drivers staff the center.

www.odfl.com 800-432-6335

Con-way Freight

A new 105-door, 41,500-square-foot facility in San Antonio, Texas, serves as Con-way Freight's local hub for daily freight pickup and delivery service, nightly re-ship operations connecting San Antonio with one-, two-, and three-day service points in the carrier's nationwide network, and as a gateway for goods moving to and from Mexico.

www.con-way.com/en/freight 800-755-2728

Miller Transporters

Miller Transporters' new facility in New Orleans, La., offers services including dedicated carriage, local pickup and deliveries, and regional and long-haul dispatching. The location also offers rail transloading through a third party.

www.millert.com 855-792-1075

3PLs

Purolator USA

Purolator USA expanded its service options to include distribution center bypass strategies, consolidation/LTL service, returns management solutions, and express delivery capability. The 3PL specializes in transporting shipments to, from, and within the Canadian market.

www.purolatorusa.com 888-511-4811

▲ **MATERIALS HANDLING: Jungheinrich**

Three new trucks expand Jungheinrich's warehouse product line. The EZS 570NA Tow Tractor (*above*) provides 15,400-pound towing capacity and features rugged construction for indoor or outdoor use. The EKS 208/308 Order Picker offers 2,200- to 3,000-pound load capacity and order picking heights up to 33 feet. The ETV Q20/ETV Q25 Multi-directional Reach Truck travels in any direction through electronically controlled all-wheel steering and lifts 4,400 to 5,500 pounds.

www.jungheinrich-lift.com 877-JH-FORKS

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Griffin Global Logistics

Griffin Global Logistics has expanded and upgraded its customs and compliance office in Burlingame, Calif., near San Francisco, to support demand in the Bay Area market. The office handles United States and foreign customs brokerage and clearance functions, inland transportation and delivery management, and international transportation compliance management.

www.logisticsgriffin.com 800-361-5028

Jacobson Companies

To support expansion in Asia, Jacobson Companies established Jacobson Global Logistics Ltd. (JGL), based in Hong Kong. JGL provides a full range of international logistics services to and from the United States, and within Asia, including ocean and airfreight forwarding; purchasing order management; procurement and consolidation; origin value-added services; customs brokerage; bonded warehousing; deconsolidation and DC bypass; trans-load and bonded hubs; and international multimodal transport services.

www.jacobsonco.com 800-636-6171

Regal Logistics

Regal opened 351,000 square feet of public warehouse space in Charleston, S.C., designed for high-volume, quick-turnaround shipping. The facility is centrally located three miles from I-526, four miles from the Port of Charleston's main Wando Welch Terminal. It offers foreign trade zone and drayage zone status for less-expensive container transportation to ports. Regal provides distribution, pick and pack, export/import shipping, consolidation, crossdocking, transloading, drop-shipping, administrative support, and value-added services at its new facility, which is equipped with information technologies including WMS, EDI, ASN, RFID, and a real-time inventory and shipment dashboard.

www.regallogistics.com 253-922-2250

Brightpoint Inc.

Three new facilties help expand Brightpoint Inc.'s supply chain, logistics, and distribution offerings. In Plainfield, Ind., a 533,000-square-foot facility in the AllPoints Midwest business park complements an additional 200,000-square-foot facility, which supports Brightpoint's expanding reverse logistics services. A 264,000-square-foot

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facility in Reno, Nev., is under contract to be purchased and is expected to be operational in the second quarter of 2011.

www.brightpoint.com 800-952-2355

APL Logistics

A new cross-border trucking service transports containerized shipments from Phnom Penh, Cambodia, to Cai Mep Port in Vietnam. APL introduced the service, which offers a later cutoff time at its container freight station, because trucking from Phnom Penh to Cai Mep can reduce transit times by as much as four days compared to feeder services from the Sihanoukville port or barge services from the Phnom Penh river port to Cai Mep Port.

www.apllogistics.com 866-896-2005

EXPEDITED

FedEx Freight Canada

The carrier reduced transit times in more than 500 lanes connecting Toronto and Montreal to dozens of cities and regions in the United States, enabling cross-border LTL shippers to achieve supply chain improvements. The company also expanded its service center network with two additional facility openings in the Toronto area, and provides all-points coverage to more than 7,000 cities in 10 provinces, as well as trans-border service for shipments to and from the United States and other locations.

www.fedex.com 866-FXF-INTL

Lone Star Overnight (LSO)

LSO Simple, a new inclusive pricing option for LSO's priority products, matches the leading national expedited carriers' published rates for the equivalent 10:30 a.m. and 3 p.m. overnight services for the appropriate zone and weight combination, but with no added fees for pickup or residential or extended delivery, and no fuel surcharges. The LSO Simple option is available with the carrier's LSO Basic and LSO Economy Overnight services, including LSO Early Service and Saturday Delivery, for shipments tendered through the carrier's Web site. Shippers can still choose LSO's base rate pricing and pay for additional services separately.

www.lso.com 800-800-8984

UPS Freight

The heavy freight arm of UPS improved transit times between U.S. cities and Calgary and Edmonton, Alberta, Canada. The carrier now offers two-day service from Denver and Las Vegas to the Calgary and Edmonton markets, and three-day service from Dallas and southern California.

www.ltl.upsfreight.com 800-333-7400

MATERIALS HANDLING

Linde Material Handling

The eight models in Linde's new RX60 series of electric counterbalanced sit-down lift trucks have capacities ranging from 5,000 to 10,000 pounds. The emissions-free, high-performance trucks travel at up to 12 mph and are suitable for manufacturing, storage and distribution, and logistics applications.

www.lmh-na.com 843-875-8000

Presto Lifts

Ideal for stockrooms, assembly areas, laboratories, offices, and retail stores, the Lift Stik lifter/transporter is available in four models with load capacities ranging from

▲ **Mobile Devices: Zebra Technologies**

Designed to handle the harsh demands of mobile computing in the field, the RW 420 Route Palette allows workers to enter data, and print receipts, invoices, and inventory pick tickets. Ideal for route accounting, direct store delivery, and field service and sales operations, the integrated carrying device is designed to work specifically with Motorola's new MC9500 industrial-grade mobile handheld device.

www.zebra.com 800-452-4056

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185 to 445 pounds. Its innovative compact design distributes the load evenly among four oversized casters that roll easily over thresholds and uneven floors. Maximum lift heights of the platform/forks range from 52 to 65 inches. The unit's ergonomic, contoured sponge-grip handles adjust to accommodate operators of different heights.

www.prestolifts.com	800-343-9322

Southworth Products Corp.

The redesigned PalletPal Level Loader's heavy-duty springs automatically lower or raise a pallet as weight is added or removed, maintaining the top layer of stacked containers at a convenient height. The loader's turntable ring or optional turntable platform allows users to spin the load so they can stand in the same spot throughout the loading or unloading process. Capable of accommodating loads weighing from 400 to 4,500 pounds, depending on the spring package installed, the PalletPal requires no power and features fork pockets at the base to allow for easy relocation.

www.southworthproducts.com	207-878-0700

PARTNERSHIPS

PeopleNet and TMW Systems

PeopleNet, a provider of integrated onboard computing and mobile communications systems for fleet management, and TMW Systems, which offers *TMT Fleet Maintenance* software, partnered to create *eDVIR*, an application that automates driver vehicle inspection ticket creation. *TMT Fleet Maintenance* polls PeopleNet's message history and creates a work order when it detects a vehicle defect identified by a driver in an *eDVIR* form message. The system automatically tags safety-related issues for highest priority maintenance. When the vehicle repair is completed, the system sends dispatch and the vehicle's scheduled driver a message through PeopleNet *Fleet Manager*, identifying the mechanic and the corrective action taken.

www.peoplenetonline.com	888-346-3486
www.tmwsystems.com	800-401-6682

MOBILE DEVICES/APPS

CargoSmart

SSM20 Lite, CargoSmart's new sailing schedules iPhone application, allows shippers, logistics service providers, and


ONE STOP, ALL ACCESS.
ALL ACCESS
PASS

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MATERIALS HANDLING: Intelligrated
The IntelliSort TT high-capacity sortation system is suitable for use in high-volume distribution centers, parcel hubs, and fulfillment operations. The system's modular platform provides flexibility, and easily integrates into existing environments.

www.intelligrated.com 877-315-3400

ocean carriers to manage critical ocean schedule information. The application lets users look up sailing schedules by carrier, origin city, and destination city search criteria. The search results show carriers, origin/destination cities, departure/arrival dates, and transit times. Users can share schedule search results by e-mail and SMS with colleagues and customers directly from their iPhones. CargoSmart currently offers schedules from 15 leading ocean carriers and is expanding to offer more carrier schedules.

www.cargosmart.com 877-541-6625

UPS
The expedited carrier extended its UPS Mobile apps to shippers in Germany, the United Kingdom, France, Italy, and Canada. The apps, available for Android, BlackBerry and iPhone, enable shippers to send and track packages, and find the nearest UPS location.

www. ups.com/mobile 800-PICK-UPS

SYSPRO
The SYSPRO On the Go iPhone application allows SYSPRO enterprise resource planning users to access information about customers, suppliers, inventory items, and contacts wirelessly and securely via the iPhone.

http://americas.syspro.com 800-369-8649

OCEAN
Matson
The expanded China-Long Beach Express service offers twice-weekly service from Shanghai and weekly service from Hong Kong, Yantian, Xiamen, and Ningbo to Long Beach. The expanded service also features a new direct westbound service to China that links southern California and the U.S. interior to Hong Kong, Shanghai, and the Pearl River Delta.

www.matson.com 800-4MATSON

APL
Operating with four 3,000-TEU container ships, the weekly China Indonesia Straits Service links China, Indonesia, Malaysia, Singapore, and Thailand.

www.apl.com 800-999-7733

SeaFreight Line
A new weekly fixed-day service calls on Costa Rica and Nicaragua via Puerto Limon, Costa Rica. The six-day transit is the fastest all-water service between Puerto Limon and Jacksonville, Fla.

www.seafreightagencies.com 305-592-6060

MOL
MOL added a call at Honolulu to its WL2 service, which originates in Tokyo and stops at ports including Shanghai, Yokohama, and Manzanillo. Both dry and refrigerated cargo are accepted on the revamped WL2, and the service continues to accept cargo to Mexico, Ecuador, and Colombia.

www.molpower.com 800-OK-GATOR

CMA CGM
The upgraded Black Pearl service now provides direct service from Ecuador, Chile, and Peru to Philadelphia and Halifax. It also offers extended coverage of the Caribbean region, Mexican Gulf,

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and the east coast of South America, with transshipments in Kingston, Jamaica; connections to and from the Far East for cargo from the west coast of South America via transhipments in Balboa, Panama, on PEX3 service; and connections to and from North Europe through the Kingston hub on ECS Service. The Black Pearl service deploys a fleet of six 1,100-TEU vessels.

www.cma-cgm.com 757-961-2100

CSAV

CSAV's new Gran America vehicle carrier service sails every other week from Port Everglades, transporting a mix of automobiles, trailers, tractors, and other rolling stock equipment to ports throughout South America.

www.csav.com 800-804-9391

Evergreen Line

The new ASEAN-Gulf-ISC 35-day Southeast Asia-Middle East service cuts transit times and enhances the regional shipping network. The port rotation is Laem Chabang-Singapore-Tanjung Pelepas-Port Klang-Colombo-Jebel Ali-Karachi-Mundra-Colombo-Port Klang-Singapore-Laem Chabang.

www.evergreen-line.com 201-761-3000

EQUIPMENT POOLING

Intelligent Global Pooling Solutions (iGPS)

The new iGPS bios pallet rental system serves the unique needs of the pharmaceutical and life sciences industries, providing enhanced levels of pallet hygiene. The service's NSF International Food Equipment certified pallets are individually washed and sanitized, then enclosed in a protective wrapping that prevents contact with bacteria, pathogens, and chemical contaminants, whether airborne or on surfaces. Each iGPS pallet has four RFID tags embedded in its frame, which enables tracking and tracing throughout the supply chain.

www.igps.net 800-884-0225

Container and Pooling Solutions (CAPS)

CAPS expanded its container rental solutions to Mexican markets to support ongoing growth in intra-Mexico commerce and U.S. sourcing to Mexican-based suppliers.

www.usecaps.com 888-873-2277

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RFID

Checkpoint Systems

The Handheld Merchandise Visibility Solution allows retailers to track inventory at the item level both in the back room and on the sales floor, helping to improve inventory accuracy, reduce out-of-stocks, improve replenishment, and increase store efficiency and sales. The solution includes handheld RFID readers, software, hard tags and labels, and service and support.

www.checkpointsystems.com 800-257-5540

PORTS

Port of Seattle

The port's Foreign Trade Zone (FTZ) reorganized under the Alternative Site Framework, a more efficient process that requires less paperwork. Companies can now gain the competitive advantage of securing FTZ status for manufacturing, warehousing, and distribution operations within 30 days after filing an application.

www.portseattle.org 206-787-3271

SOFTWARE

Airclic

Upgrades to the *Courier Perform* tracking solution include virtual crossdock functionality to shorten delivery times and reduce costs. Regardless of change of custody throughout the process, *Courier Perform* delivers complete visibility and item-level order-tracking capabilities.

www.airclic.com 215-504-0560

Arigo

Arigo's *Sourcing and Trade Management* solution now features a desktop function that facilitates configuring transactional data, real-time trading partner data, and relevant industry data on a single page; a workflow tool that enables users to track production milestones, reports, and exceptions; and an enterprise collaboration function that allows users to connect with trading partners and share information.

www.arigo.com 978-528-2200

Cadre Technologies

The latest version of the *Cadence* warehouse management system includes improved voice-picking capabilities that allow users to request specific stockkeeping unit information during picking operations; faster label-picking capabilities; and improved third-party billing support for transportation management systems.

www.cadretech.com 888-599-5868

LeanLogistics

A new office in Mississauga, Ontario, provides sales and support for Canadian shippers using LeanLogistics' *On-Demand TMS* technologies and supply chain services.

www.leanlogistics.com 616-738-6400

Smart Software Inc.

The new version of *SmartForecasts* includes multi-tier inventory optimization tools, automation features that simplify and streamline forecasting, and improved data management to speed system performance.

www.smartcorp.com 800-SMART-99

WEB

GR8FR8

This new Web site, pronounced Great Freight, connects shippers to carriers directly, without intermediaries, and allows for free-market quoting, real-time communication, direct tendering, online booking, TMS functionality, and executive-level reporting.

http://gr8fr8.com 877-GR8.3030

Pacer International

The Smoother Moves Calculator Web tool enables shippers to estimate the value of switching from truckload to Pacer intermodal services. With the interactive tool, users can choose their origin and destination city pairs, commodity type, and shipment quantities for

Mobile Devices: Psion Teklogix

The new Omnii EP10, a small and durable PDA device, offers the functionality of high-end, full-size devices in a smaller form and at an affordable price. It is designed for use in harsh weather and environmental conditions, such as loading docks, temperature-controlled facilities, and delivery trucks.

www.psionteklogix.com 800-322-3437

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their current truckload lanes. The calculator then provides immediate feedback on the estimated dollar savings, carbon emission reductions, and transit time differences associated with switching to Pacer's intermodal services.

www.pacer.com 888-722-7404

REFERENCES

Association for Operations Management (APICS)

APICS released the 13th edition of the *APICS Dictionary*, a reference for core terminology and emerging definitions in operations and supply chain management. The new edition contains more than 300 new terms and definitions, and is available for electronic download.

www.apics.org 800-444-2742

AIR

TNT Airways

TNT added three Boeing 777-200 Long Ranger Freighters to its fleet, to be delivered by the end of 2011. The aircraft offer a maximum payload of 107 tons, and will be used for long-haul routes from Europe to Asia.

www.tnt.com 631-927-4000

American Airlines (AA) Cargo

AA Cargo now operates daily nonstop Boeing 767 cargo service between John F. Kennedy International Airport and Rio de Janeiro, Brazil. The carrier also launched three-day-a-week seasonal nonstop Boeing 767 cargo service between Dallas/Fort Worth and Rio.

www.aacargo.com 800-CARGO AA

Aloha Air Cargo

The Hawaiian airfreight carrier expanded its fleet with two new turbo-prop Saab 340 planes, increasing its fleet to six interisland carriers. The new additions allow the carrier to offer more options for transporting goods and provide shippers greater efficiency and flight flexibility.

www.alohaaircargo.com 888-94-ALOHA

Lufthansa Cargo

Two MD-11 flights per week transport shipments from Frankfurt, Germany, to Manaus, Brazil, on Monday and Friday. The services include stopovers in both Dakar and Viracopos, São Paulo. The return flights from Manaus on Tuesday and Saturday stop in Quito and Bogotá, with a technical stop in Curacao.

www.lufthansa-cargo.com 800-LH-CARGO

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.


UNLOCK THE POWER OF YOUR FIELD SERVICE TEAMS WITH MOBILITY: DRIVE PRODUCTIVITY AND PROFITABILITY TO THE NEXT LEVEL

Motorola and Zebra

TITLE: ***Unlock the Power of Your Field Service Teams with Mobility***
LENGTH: *12 pages*
DOWNLOAD: *http://tinyurl.com/ilmotorola*
SUMMARY: Field service operations can influence the entire enterprise. When field service organizations operate at less than maximum effectiveness, many areas of the business are impacted—including customer satisfaction, service and retention levels, and overall profitability. Achieving maximum productivity involves streamlining and automating processes to reduce or even eliminate the large volume of paperwork that often burdens field service professionals. Beyond that, it also requires the efficient delivery of the wealth of information service technicians need to best perform service calls and take advantage of possible sales opportunities while maximizing staff and vehicle utilization. In this whitepaper, Motorola and Zebra jointly detail how mobility can benefit field service operations, considerations when implementing mobile field service applications, and technical considerations when evaluating potential solutions.

Kewill

TITLE: ***Reverse Lifecycle Management: ROI Model for Reverse Logistics***
LENGTH: *10 pages*
DOWNLOAD: *http://tinyurl.com/kewill4*
SUMMARY: Kewill's latest whitepaper examines the potential financial returns that may be achieved through the implementation of a Reverse Lifecycle Management (RLM) solution. The paper highlights major areas for further exploration and financial analysis within the reverse logistics supply chain. Also provided is an embedded ROI model that is based on collective experience working with clients and customers. The whitepaper is authored by Michael Blumberg, president of Blumberg Advisory Group, and Bob Leeds, global product manager for reverse logistics at Kewill.

LMS

TITLE: ***Exploring the SaaS Model***
LENGTH: *9 pages*
DOWNLOAD: *http://www.lmslogistics.com/saas.asp*
SUMMARY: Today's lean-and-mean logistics market is embracing Web-based transportation management systems (TMS) that do not entail hefty upfront costs or cumbersome implementations. This comprehensive paper examines these on-demand/ASP/SaaS models, addresses system concerns, and provides a checklist for companies that are shopping for a Web-based TMS package.

3PL Central

TITLE: ***3PL Warehouse Guide: 7 Essentials for Supporting eCommerce Fulfillment***
LENGTH: *8 pages*
DOWNLOAD: *www.3plcentral.com/3pl_ecommerce_fulfillment_email*
SUMMARY: Were you ready this holiday season? As a 3PL warehouse, you cannot afford to ignore the significant growth opportunities of doing eCommerce fulfillment. Whether you already handle fulfillment or are looking to expand your warehousing services, this *3PL Warehouse Guide* covers the seven essential functions needed to support eCommerce fulfillment. Download this free whitepaper for insight on must-have capabilities all 3PL warehouses need to support eCommerce fulfillment.

Werner Enterprises

TITLE: ***Driving to be Green: Sustainability in the Transportation Industry***
LENGTH: *12 pages*
DOWNLOAD: *http://www.werner.com/content/about/white_papers.cfm*
SUMMARY: Werner Enterprises is dedicated to utilizing technology to improve efficiency and sustain the environment. However, investing in green initiatives is challenging because large capital investments are often required. Learn more about overcoming these challenges and analyzing the effectiveness of green initiative strategies and solutions in Werner Enterprises' whitepaper, *Driving to be Green: Sustainability in the Transportation Industry*.

Ryder

TITLE: ***ERP Implementations: Streamlining Through Supply Chain Outsourcing***
LENGTH: *10 pages*
DOWNLOAD: *www.ryder.com/lms_erp.shtml*
SUMMARY: Outsourcing non-core activities, such as logistics and warehouse management, reduces the complexity, risks, costs, and time to go-live of ERP systems. It's common for companies implementing all-encompassing ERP systems to have at least some problems, delays, and cost overruns. For The Hershey Company, Levi Strauss and Company, and Whirlpool, those problems had a dramatic effect on the companies' bottom lines. Outsourcing is a proven method to achieve world-class logistics and warehousing operations in a fraction of the time—and risk—of implementing an ERP system.

WhitePaperDigest

Zebra and Motorola

TITLE: ***Customer Case Study: McMahon Cartage***
LENGTH: *2 pages*
DOWNLOAD: *snipurl.com/ilzebra1*
SUMMARY: Carriers across the United States are struggling to reduce costs to keep customers happy and bottom lines healthy. To survive and thrive, carriers are called upon by their customers to find new, more efficient ways to operate to help drive costs out of *their* logistics network. Download this case history and see how one mid-sized carrier took touches out of the dispatch process using the latest in combined technology from Zebra and Motorola. You'll see how several steps were removed from the dispatch process; route planning was optimized to save planning time and boost safety and efficiency; order tracking enhanced accountability; and sales increased due to improved customer service.

Intelligrated

TITLE: ***Conventional vs. Robotic Palletizing***
LENGTH: *2 pages*
DOWNLOAD: *www.intelligrated.com/information_center/white_papers*
SUMMARY: Intelligrated, a Cincinnati-based automated materials handling solutions provider, has released a new whitepaper that discusses the viability of various types of palletizing technologies, ranging from conventional machines to robotic solutions. Written by Intelligrated Product Manager Pat O'Connor, the publication outlines the specific applications that favor robotic, conventional, and hybrid palletizing solutions.

Yale

TITLE: ***Corporate Responsibility: Operating in the Green***
LENGTH: *9 pages*
DOWNLOAD: *www.northamerica.yale.com/white-papers/Yale-Benefits-of-Green.pdf*
SUMMARY: Environmentally responsible practices can make your operation greener in more ways than one. Find out how saving the environment can also help you save money in this Yale whitepaper.

Ameren Economic Development

TITLE: ***Competitive Marketing Analysis-Wholesale Trade***
LENGTH: *29 pages*
DOWNLOAD: *www.surveymonkey.com/s/7N8F7RN*
SUMMARY: Among the Midwest's largest utilities, Ameren's Illinois and Missouri service area has an unusually strong set of assets for distribution centers and related business facilities. Ameren's whitepaper, *Competitive Marketing Analysis-Wholesale Trade*, discusses how selected business costs range from 18 percent to 27 percent below the national average for distribution centers. Learn how Ameren's advantages of least-cost option, market access, and connectivity can work for you.

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**

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CALENDAR

YOUR LOGISTICS DATEBOOK

February 20-23, 2011, Logistics Conference 2011, Orlando, Fla. The Retail Industry Leaders Association presents this event focused on supply chain trends affecting retail operations. Sessions provide executives with an overview of supply chain issues in the retail industry and updates on product safety, food distribution, and sustainability.

703-600-2039
www.rila.org

March 21-23, 2011, JAXPORT 2011 Logistics and Intermodal Conference, Ponte Vedra Beach, Fla. This conference, sponsored by the Jacksonville Port Authority, offers sessions on funding challenges for transportation infrastructure; the potential to grow U.S. exports through revived U.S. manufacturing; and novel ideas to improve ocean carrier customer service.

904-357-3047
www.jaxportconference.com

April 4-6, 2011, Transportation and Logistics Council Annual Conference, St. Louis, Mo. The program includes sessions and workshops addressing all transportation modes. Discussion topics cover regulatory compliance, risk management, freight charge liability, and claims.

631-549-8988
www.tlcouncil.org

April 7-8, 2011, AmeriQuest Transportation Industry Symposium, Orlando, Fla. This event brings together private fleets, truck leasing companies, truckload carriers, and transportation supply chain companies in intensive discussion on how to guide businesses today and into the future.

800-608-0809
www.ameriquestcorp.com

April 10-13, 2011, COSTHA Annual Forum and Expo, Scottsdale, Ariz. Presented by the Council on Safe Transportation of Hazardous Articles, this event explores legislative topics, transportation issues facing the life sciences industry, and tips for shippers working with vessel operators and air carriers. The program also offers insight on how new and emerging technologies, regulatory requirements, and legal trends can affect your efficiency.

703-451-4031
www.costha.com

(continues on page 306)

CALENDAR

CONTINUED FROM PAGE 305

April 17-20, 2011, NASSTRAC Conference & Logistics Expo, Orlando, Fla. Hosted by the National Shippers Strategic Transportation Council, this conference attracts transportation and supply chain executives with manufacturers, retailers, and distributors, as well as leading 3PLs and carriers. Educational sessions feature CEOs of leading motor carriers such as FedEx Freight, Old Dominion, and Werner discussing issues facing the trucking industry; 3PL executives from companies such as OHL, CEVA Logistics, and MIQ Logistics on outsourcing trends; and shippers explaining best practices in their supply chain strategies. The event also features a full exhibition of leading carriers and providers.

952-442-8850 x208
www.nasstrac.org

April 17-19, 2011, SCOPE East 2011, Orlando, Fla. The Supply Chain Operations Private Exposition (SCOPE) program offers educational sessions focused on consumer goods, retail, and industrial supply chains; 3PL/distribution; and summits for CIOs and procurement executives. The event also features strategic presentations and panels from industry thought leaders, real-world customer-led case studies, targeted research meetings with leading suppliers, and networking opportunities with industry peers.

310-706-4150
www.scopeeast.com

May 1-6, 2011, Supply Chain Logistics Management, Lansing, Mich. This course, offered by Michigan State University's Executive Programs, emphasizes supply chain integration, performance measurement, technological application, organizational dynamics, and the lessons learned from global world-class logistics organizations.

800-356-5705
http://broad.msu.edu/edp

June 8-10, 2011, CSCMP Europe Conference, Barcelona, Spain. At the Council of Supply Chain Management Professionals' (CSCMP) European global conference, attendees explore new strategies for entering emerging markets, the role that business culture plays in forging collaborative relationships with suppliers and customers, and how IT drives supply chain efficiency.

630-574-0985
www.cscmp.org

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March 6-8, 2011

Driving Best Practices in 3PLs

International Warehouse Logistics Association 120th Annual Convention

Mark March 6-8, 2011 on Your Calendar Now!

The International Warehouse and Logistics Association (IWLA) has designed its **120th Annual Convention** to offer resources, critical information, and best practice guidelines for the 3PL community. The Convention program will provide the opportunity for hands-on instruction from some of the greatest minds in the logistics industry. By attending IWLA's Annual Convention, you will learn how to develop a sustainable process for your warehouse operations and you will afford yourself the ability to network with your 3PL peers stimulating innovative ideas and business opportunities.

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www.3pd.com 866-373-7874
3PD Inc. helps you cut costs without compromising customer service and trim last-mile expenses without sacrificing delivery excellence.
PAGE: 95 PROFILE: 352

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www.artransport.com 800-542-8058
Since 1969, A&R Logistics has been providing the chemical industry with best-in-class service at every level of the supply chain.
PAGE: 50 PROFILE: 353

Access America Transport
www.accessamericatransport.com 866-466-1671
Access America Transport is a third-party logistics company handling all transportation modes including van, flatbed, refrigerated/frozen, and intermodal service.
PAGE: 289 PROFILE: 355

ADS Logistic Services
www.adslp.com 877-ADS-1330
ADS' state-of-the-art technology makes it an award-winning 3PL. Get acquainted with ADS' customized distribution and fulfillment services.
PAGE: 135 PROFILE: 357

AFN
www.thebestwayeveryday.com 866-7MOVE-IT
AFN offers logistics solutions to drive business forward. As your strategic partner, AFN keeps goods moving with customized solutions to meet your specific supply chain needs – every time.
PAGE: 307 PROFILE: 358

Agility
www.agilitylogistics.com/challengeus 877-898-9813
Agility manages every move your merchandise makes, improving distribution by optimizing your facilities, inventory, materials routing, planning, and equipment utilization.
PAGE: 147 PROFILE: 359

AmeriCold
www.americoldrealty.com 888-808-4877
Move your temperature-controlled shipments and reach new markets easily and affordably with AmeriCold. AmeriCold's coast-to-coast service gives you greater efficiency and greater economy.
PAGE: 49 PROFILE: 366

APL Logistics
www.apllogistics.com 602-586-4800
APL Logistics works one-on-one with your company to find a warehousing and distribution solution that improves inventory management, reduces operations costs, and shortens order cycle times.
PAGE: 183 PROFILE: 367

Aspen
www.aspenlogistics.com 800-741-7360
Looking for best-in-class logistics solutions? Aspen offers what you need. From warehousing to transportation to value-added services, Aspen can help.
PAGE: 319 PROFILE: 368

Bender Group
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Bender Group provides intelligent logistics solutions, including warehouse design, transportation, and consulting.
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www.bigdoglogistics.com 866-745-5534

Worried that your logistics challenges are taking a bite out of profits? Let Big Dog Logistics' fully integrated global logistics services be the watchdog for your bottom line.

PAGE: 227 **PROFILE:** 370

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PAGE: 312 **PROFILE:** 371

BlueGrace Logistics
www.bluegrace.com 800-MY-SHIPPING

When you partner with BlueGrace Logistics, you get a team of logistics professionals who develop a unique understanding of you and your business.

PAGE: 73 **PROFILE:** 373

BNSF Logistics
www.bnsflogistics.com 877-853-4756

The BNSF team can build a program to solve your toughest transportation challenges.

PAGE: 5 **PROFILE:** 374

Bulk Connection Inc.
www.bulkconnection.com 800-543-2855

Bulk Connection Inc. started in 1987 with the goal of providing efficient, high-quality bulk transportation services with competitive prices. Bulk Connection's transportation professionals are experts at moving your freight better than anyone else.

PAGE: 257 **PROFILE:** 375

C.H. Robinson Worldwide
www.chrobinson.com 800-323-7587

When you trust C.H. Robinson with your global supply chain, you'll experience the power of custom supply chain solutions.

PAGES: 12-13 **PROFILE:** 376

Cardinal Logistics Management
www.cardlog.com 800-800-8293

When your first choice is Cardinal, you won't give a second thought to other 3PLs. Cardinal's experience, technology, and service can add up to profits for your company's bottom line.

PAGE: 37 **PROFILE:** 378

Carlile Transportation Systems
www.carlile.biz 800-478-1853

Carlile is a proven leader in multi-modal transportation and logistics solutions. Whether it's a pallet of tools to Tacoma or a 100-ton module to Alaska's North Slope, Carlile has the expertise, equipment, and connections to deliver peace of mind, every time.

PAGE: 47 **PROFILE:** 379

CaseStack
www.casestack.com 855-638-3500

Thousands of suppliers turn to CaseStack for innovative consolidation programs, efficient warehousing systems, and streamlined transportation management.

PAGE: 241 **PROFILE:** 380

Cat Logistics
www.catlogistics.com 630-743-4101

Let Cat Logistics take the guesswork out of optimizing your supply chain performance. More than 65 of the world's leading corporations have chosen Cat Logistics as a trusted supply chain consultant.

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CEVA Logistics
www.cevalogistics.com/simplicity 800-355-0350

CEVA Logistics works with you to understand your business and apply best-practice logistics to make it successful.

PAGE: 89 **PROFILE:** 384

Concert Group Logistics (CGL)
www.cglship.com 866-CGL-SHIP

CGL's services include domestic transportation, international export and import, documentation and special handling, and customized logistics.

PAGE: 149 **PROFILE:** 385

Corporate Traffic Logistics
www.corporate-traffic.com/ilm 800-787-2334

Corporate Traffic Logistics focuses on your needs, offering logistics services including dedicated contract carriage, warehousing, and distribution.

PAGE: 246 **PROFILE:** 393

Crowley
www.crowley.com 904-727-2438

Whether you require large-scale domestic or international supply chain management solutions, or simply have a one-time shipment, Crowley can keep your business moving.

PAGE: 225 **PROFILE:** 394

CRST International
www.crst.com 800-736-2778

CRST carries zero debt load, so it can make faster decisions, offer more competitive pricing, and is more likely to have the equipment and drivers when and where you need them.

PAGE: 119 **PROFILE:** 395

Damco
www.damco.com/industryfocus 718-425-1020

For more than 20 years, Damco has provided transportation and logistics solutions that support the way companies want to do business wherever they are in the world.

PAGE: 39 **PROFILE:** 399

DF Young
www.dfyoung.com 610-570-2620

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PAGE: 113 **PROFILE:** 401

Distribution Technology
www.distributiontechnology.com 704-587-5587

Domestic and international freight-forwarding transportation capabilities, combined with warehousing and logistics support in Charlotte, N.C., and Los Angeles, allow Distribution Technology to cost-effectively meet your customer service requirements.

PAGE: 137 **PROFILE:** 402

DSC Logistics
www.dsclogistics.com 800-372-1960

Can you really manage change? The answer is yes. The answer is also DSC Logistics, for supply chain strategies and solutions that drive change instead of letting change drive you.

PAGE: 43 **PROFILE:** 403

Dunavant Enterprises
www.dunavant.com 888-955-3547

With more than 50 years of experience in logistics and supply chain innovation, Dunavant Enterprises has the knowledge to ensure your company's logistics practices are efficient and effective while providing a customized approach for your business.

PAGE: 130 **PROFILE:** -

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www.echo.com 866-845-3909

Get visibility and savings with Echo Global Logistics as your partner in procurement, technology, and 100-percent dedicated customer service.

PAGE: 193 PROFILE: 404

Estes Forwarding Worldwide
www.efwnow.com 855-433-9669

Estes Forwarding Worldwide provides innovative, creative, and secure logistics solutions by utilizing network relationships, exceptional customer service, and advanced technology, resulting in clients who trust and depend on its commitment to their success.

PAGE: 17 PROFILE: 406

Evans Distribution Systems
www.evansdist.com 313-388-3200

From warehousing and transportation solutions to value-added services, Evans Distribution Systems has a long history of making shippers happy.

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FAC Logistics
www.faclogistics.com 800-285-7004

If you ship or receive food products, you need to know FAC. Food service logistics is FAC's business... its only business. Contact FAC for a review that will demonstrate all the benefits of dealing with a food service logistics specialist.

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FLS Transportation Services
www.flstransport.com 800-739-0939

FLS offers a variety of transportation services across the continental United States and all 10 Canadian provinces.

PAGE: 140 PROFILE: 411

Geodis Wilson
www.geodiswilson.com 877-469-0510

Geodis Wilson provides clients with integrated solutions and unrivaled customer service. For a freight management solution that will ensure your company's success, contact Geodis Wilson.

PAGE: 187 PROFILE: 414

The Gilbert Company
www.gilbertusa.com 909-393-4777

Gilbert's timely and competitive solutions provide deftness in the marketplace, accuracy in logistics, and an unwavering commitment to your retail needs.

PAGE: 235 PROFILE: 417

J&B Group
www.jbgroup.com 888-254-9465

J&B Group offers a combination of wholesaling, warehousing, and third-party logistics for a variety of specialty food products.

PAGE: 34 PROFILE: 427

J.B. Hunt Transport Services
www.jbhunt.com 866-516-7305

J.B. Hunt Transport Services' integrated, multimodal approach provides capacity-oriented solutions.

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Kane is Able
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With 1,000 employees, more than 200 trucks, and five million square feet of warehouse space, Kane is Able is ready to serve your logistics needs.

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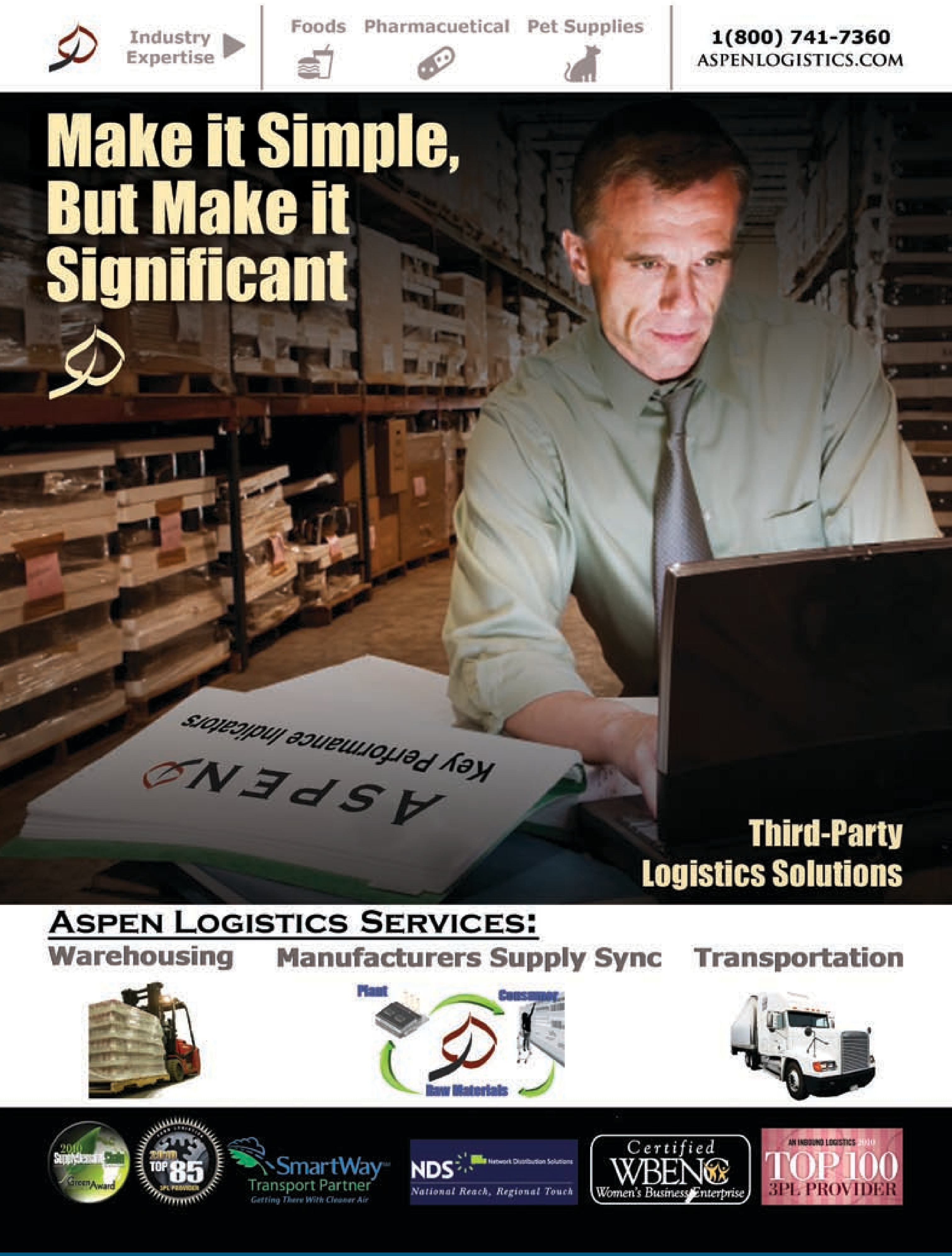
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Kelron Logistics
www.kelron.com 866-695-6414

Working with Kelron will optimize your transportation network, improve your supply chain integration, and increase profitability.

PAGE: 125 **PROFILE:** 432

Kenco Logistic Services
www.kencogroup.com 800-758-3289

Kenco Logistic Services bends over backward to solve your ever-changing challenges.

PAGE: 87 **PROFILE:** 433

Kontane Logistics
www.kontanelogistics.com 843-352-0011

Kontane Logistics uses sub-assembly, physical fulfillment, and cloud-based technology to build logical, customer-attuned logistics platforms.

PAGE: 202 **PROFILE:** 434

Landstar
www.landstar.com 866-439-1407

Call Landstar when you need safe, reliable transportation, logistics, and warehousing services.

PAGE: 25 **PROFILE:** 436

Laufer Group International
www.laufer.com 212-945-6000

Laufer Group International delivers improved shipping flexibility, enhanced operational control, and exceptional and accurate customer service.

PAGE: 275 **PROFILE:** 437

Leading Edge Logistics
www.leadingedgelogistics.com 610-359-1500

Leading Edge Logistics is a performance-based logistics management company that guarantees logistics cost savings to 100 percent of its customers.

PAGE: 243 **PROFILE:** 438

LeSaint Logistics
www.lesaint.com 877-KNOW-3PL

Looking for a logistics provider that knows how to manage the complexities of your supply chain? Turn to LeSaint Logistics, a nationally recognized 3PL.

PAGE: 231 **PROFILE:** 440

Lily Transportation Corp.
www.lily.com 800-248-LILY

Lily provides customized dedicated contract carriage systems for companies whose needs include efficient transportation, direct store delivery, and retail and wholesale distribution.

PAGE: 24 **PROFILE:** 441

LMS
www.lmslogistics.com 800-355-2153

LMS is a non-asset-based third-party logistics provider that enables manufacturers, wholesalers, and retailers to gain competitive advantages through optimal transportation management.

PAGE: 168 **PROFILE:** 443

Lynden
www.lynden.com 888-596-3361

A full-service freight forwarder, including air, ocean, and customs brokerage, Lynden connects you with hard-to-reach locations.

PAGE: 115 **PROFILE:** 444

LynnCo Supply Chain Solutions
www.lynnco-scs.com 866-872-3264

LynnCo helps manufacturers extend the lean principle outside the four walls to streamline the flow of product into and out of their facilities.

PAGE: 295 **PROFILE:** 445

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M&W Logistics Group
www.mwtrans.com 615-256-5755

Strategically located in Nashville, Tenn., M&W Logistics Group builds long-term customer relationships based on service, information management, and flexibility.

PAGE: 190 **PROFILE:** 446

Mallory Alexander International Logistics
www.mallorygroup.com 800-257-8464

Flexible, responsive, and backed by strategically located operations around the world, the people of Mallory Alexander International Logistics can show you how to stay ahead of the game.

PAGE: 220 **PROFILE:** 449

Menlo Worldwide Logistics
www.menloworldwide.com/il 630-449-1084

You can trust Menlo Worldwide Logistics to give you every advantage by applying proven processes to solve complex supply chain problems.

PAGE: 7 **PROFILE:** 392

New Breed Logistics
www.newbreed.com 866-463-9273

New Breed knows that just because you outsource logistics doesn't mean you want to give up control. New Breed sweats the details, just like you.

PAGES: Cover 2 -1 **PROFILE:** 458

Nexus Distribution
www.nexusdistribution.com 800-536-5220

Nexus Distribution's collaborative effort of people, technology, and location allows its customers to gain differentiation in their target markets and win new business.

PAGE: 173 **PROFILE:** 459

NFI
www.nfiindustries.com 877-NFI-3777

NFI provides transportation, fulfillment, and technology solutions – it's a completely integrated supply chain solutions company. Find out how you can join its list of satisfied customers.

PAGE: 157 **PROFILE:** 460

OHL
www.ohl.com/letsgo 800-401-6400

You'll know exactly where your shipments are when you have OHL as your global supply chain management partner.

PAGE: 129 **PROFILE:** 464

Pacer Distribution Services
www.pacer.com 888-722-7404

With one of the largest and most diverse equipment fleets in North America, Pacer provides customized solutions through integrated door-to-door control of every shipment.

PAGE: 63 **PROFILE:** 468

Penske Logistics
www.penskelogistics.com 800-529-6531

Penske will work one-on-one with you to design customized logistics and supply chain solutions that instill process excellence, improve productivity, enhance quality and service, and ultimately drive down costs.

PAGE: 161 **PROFILE:** 470

Performance Team
www.ptgt.net 866-775-5120

Performance Team is a national leader in custom end-to-end logistics solutions for the retail and manufacturing industries.

PAGE: 83 **PROFILE:** 472

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Phoenix
www.phoenix3plgroup.com 800-521-0074

Phoenix has been providing importers, manufacturers, and retailers with diverse distribution solutions, logistics technology, and financial discipline since 1976.

PAGE: 298 **PROFILE:** 473

PITT OHIO
http://works.pittohio.com 800-366-7488

PITT OHIO is a transportation solutions provider that understands its customers' needs and strives to provide reliable supply chain, ground transport, LTL, and truckload solutions.

PAGE: 59 **PROFILE:** 475

Port Jersey Logistics
www.portjersey.com 609-860-1010

If you're seeking a logistics partner who is perfectly tuned in to your needs, look no further than Port Jersey Logistics. Its total supply chain management services for domestic manufacturers and international shippers make sure you don't miss a beat.

PAGE: 155 **PROFILE:** 479

Port Logistics Group
www.portlogisticsgroup.com 973-249-1230

Retailers and manufacturers with the most demanding supply chain challenges trust Port Logistics Group with their warehousing, distribution, import deconsolidation, transloading, and local and national transportation.

PAGE: 199 **PROFILE:** 480

ProTrans International
www.protrans.com 888-776-8726

ProTrans International specializes in synchronized freight consolidation and inventory management. Its goal is to be an extension of each client's logistics department, providing innovative, cost-savings opportunities through state-of-the art services.

PAGE: 201 **PROFILE:** 483

PSS Distribution Services
www.pssdistribution.com 800-PSS-TRKG

PSS Distribution Services offers a world-class network of strategically located distribution centers so you can position inventory within minutes of your clients' doors.

PAGE: 67 **PROFILE:** 484

RMX Global Logistics
www.rmxglobal.com 888-824-7365

RMX Global Logistics offers a full range of logistics services, specializing in JIT service to domestic customers. If you want a third-party relationship that is richly rewarding, partner with RMX Global Logistics.

PAGES: 57, 144, 310 **PROFILE:** 488

ROAR Logistics Inc.
www.roarlogistics.com 888-292-7627

ROAR Logistics Inc. is an intermodal marketing company, third-party logistics provider, and ocean freight forwarder offering a diverse range of transportation services to a global clientele.

PAGE: 278 **PROFILE:** 489

RR Donnelley Logistics
www.rrdonnelley.com 888-SHIP-RRD

Why not consider a move to RR Donnelley Logistics? It's a strong, dependable company that understands firsthand the impact of logistics on your business.

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■ **Ruan**
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Ruan is driven to move you forward. With more than 75 years of experience, Ruan continues to think of new ways to help shippers maximize the bottom line.
PAGE: 127 PROFILE: 491

■ **Ryder**
www.ryder.com 888-88-RYDER
Unmatched experience, flexibility, and expertise make Ryder the one to turn to all over the globe.
PAGE: 3 PROFILE: 492

■ **Saddle Creek Corporation**
www.saddlecrk.com 888-878-1177
For more than 40 years, Saddle Creek has provided leading companies with warehousing, transportation, and integrated logistics services.
PAGE: 197 PROFILE: 493

■ **Scott Logistics Corp.**
www.scottlogistics.com 706-234-1184
Scott Logistics can create innovative solutions for your toughest transportation, logistics, and supply chain challenges.
PAGE: 75 PROFILE: 494

■ **SEKO**
www.sekologistics.com 800-228-2711
SEKO provides global supply chain solutions leveraging best-in-class technology, a global network of more than 100 local offices, and aggressive transportation buying power.
PAGE: 217 PROFILE: 495

■ **Serec**
www.serec.com 847-295-7360
Serec provides an array of fulfillment services including EDI order processing, pick and pack, labeling, pricing, ticketing, light assembly, kitting, e-fulfillment, and inventory visibility.
PAGE: 285 PROFILE: 496

■ **Service By Air**
www.servicebyair.com 888-GO-MY-SBA
With more than 35 years of experience delivering shipments on time, Service By Air is committed to providing quality service and accommodating each customer's needs with value-added solutions.
PAGE: 45 PROFILE: 497

■ **Shippers Warehouse**
www.shipperswarehouse.com 214-381-5050
With industry-leading operations, management information, and transportation systems, Shippers Warehouse is the premier third-party logistics and distribution provider in the Southwest.
PAGE: 79 PROFILE: 498

■ **Strive Logistics**
www.strivelogistics.com 866-STRIVE-1
No matter where your business takes you, you'll find Strive Logistics there with truckload, LTL, refrigerated, flatbed, intermodal, air, ocean, expedited, warehousing, and freight management services.
PAGE: 99 PROFILE: 503

■ **TMSi Logistics**
www.tmsilog.com 603-792-2205
TMSi is your single source for distribution, engineering, and warehouse support services; dedicated contract carriage; and freight, warehouse, and transportation management.
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TransGroup Worldwide Logistics
www.transgroup.com 800-444-0294

It's easy to lose track of shipments when you're managing the supply chain by yourself. Why not try TransGroup Worldwide Logistics, one of the big guns in the logistics business?

PAGES: 151, 281 **PROFILE:** 506

Transplace
www.transplace.com 888-445-9425

With Transplace, you get more – more speed, more technology, more connectivity, and more smarts.

PAGES: 261, Cover 4 **PROFILE:** 508

Transportation Insight
www.transportationinsight.com 828-485-5000

With Transportation Insight, you will maximize profits, improve customer service, enhance visibility, increase productivity, and gain more supply chain control.

PAGE: 26 **PROFILE:** 509

Tucker Company Worldwide
www.tuckerco.com 800-229-7780

When you need a competitive advantage, turn to Tucker Company Worldwide, delivering customized logistics solutions.

PAGE: 282 **PROFILE:** 513

Unyson Logistics
www.unysonlogistics.com/savenow 866-409-9759

When your supply chain works in unison you reap strategic benefits. Unyson Logistics helps you drive out supply chain costs by creating solutions that offer unity, visibility, and stability.

PAGE: 61 **PROFILE:** 517

UTi Worldwide Inc.
www.go2uti.com 800-331-1226

UTi Worldwide uses its global network, proprietary information technology systems, transportation partners, and expertise in outsourced logistics services to deliver competitive advantage.

PAGE: 91 **PROFILE:** 518

Wagner Industries
www.wagnerindustries.com 800-817-1264

Wagner's North American transportation solution, distribution centers, and contract packaging services save you time and money.

PAGE: 277 **PROFILE:** 519

Weber Logistics
www.weberlogistics.com 855-GO-WEBER

Weber's expertise includes contract and shared warehousing, freight management, LTL, and TL services including temperature-controlled, cross docking, transloading, pool distribution, network optimization modeling and analysis, retail compliance, value-added services, and supply chain management.

PAGE: 323 **PROFILE:** 521

Werner Enterprises
www.werner.com 800-228-2240

Freight management is simple once you know the right moves. Simplify complexity with Werner, the leader in freight transportation innovation.

PAGE: 133 **PROFILE:** 522

West Bros. Transportation Services
www.westbros.com 919-281-0794

West Bros. provides highly cost-effective supply chain solutions through its logistics services and the expanded resources of its parent company, Brown Trucking.

PAGE: 167 **PROFILE:** 523

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WSI (Warehouse Specialists, Inc.)
www.wsinc.com 920-731-3115
For more than 40 years, WSI has helped shippers succeed by consistently delivering on its commitment to Condition, Count, and Time® – ensuring that products are delivered accurately and on time.
PAGE: 303 PROFILE: 524

Air Cargo

AirNet
www.airnet.com 888-888-TIME
AirNet's customized shipping solutions leverage the most extensive transportation network available to offer you unmatched scheduling flexibility with the latest departures and earliest arrivals.
PAGE: 103 PROFILE: 360

Alaska Air Cargo
www.alaskacargo.com 800-225-2752
With Alaska Air Cargo, you can experience hassle-free, reliable shipping to more than 75 destinations, including new service to Calgary, Houston, and Honolulu.
PAGE: 11 PROFILE: 361

Southwest Cargo
www.swacargo.com 800-533-1222
With fast, friendly, and reliable service, Southwest Cargo ships your items from point A to point B in the same day. Let its award-winning employees handle your shipping needs.
PAGE: 123 PROFILE: 500

Associations

The International Air Cargo Association (TIACA)
www.tiaca.org 786-265-7011
Join TIACA's Air Logistics Network today and become part of a worldwide community of air logistics professionals from all industry sectors.
PAGE: 339 PROFILE: -

Brokerage Services

GTO 2000
www.gto2000.com 800-966-0801
GTO 2000 provides transportation solutions utilizing a network of freight brokers, freight agents, truck brokers, and freight carriers.
PAGE: 287 PROFILE: 419

Career Development/Education

American Public University (APU)
www.studyatapu.com/tlm 877-777-9081
APU offers bachelor's and master's degrees in transportation and logistics management entirely online, designed for busy logistics professionals.
PAGE: 331 PROFILE: 365

Executive Masters in International Logistics (EMIL), Georgia Tech
www.emil.gatech.edu 404-385-2538
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PAGE: 329 PROFILE: 415

Georgia Tech Supply Chain & Logistics Institute
www.pe.gatech.edu/scl-inbound 404-894-2343
Remain at the forefront of the logistics field with Georgia Tech Supply Chain & Logistics Institute. Find courses in materials handling, logistics optimization, inventory planning, and other hot topics.
PAGE: 333 PROFILE: 416

Institute of Logistical Management
www.mylogisticscareer.com 888-ILM-4600
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ChemLogix
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PAGE: 189 PROFILE: 387

Events

IWLA Annual Conference
www.iwla.com 847-813-4699
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PAGE: 311 PROFILE: 424

National Shippers Strategic Transportation Council (NASSTRAC)
www.nasstrac.org 952-442-8850
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PAGE: 309 PROFILE: 456

ProMat 2011
www.promatshow.com 800-446-2622
March 21-24, 2011, in Chicago, the materials handling and logistics industry showcases the latest manufacturing, distribution, and supply chain solutions at ProMat 2011.
PAGE: 181 PROFILE: 452

Expedited

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PAGE: 177 PROFILE: 356

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www.allstateexpress.com 877-742-5875
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PAGE: 159 PROFILE: 362

OnTrac
www.ontrac.com 800-334-5000
OnTrac is the premier choice for regional, time-sensitive delivery within California, Arizona, Nevada, Oregon, Washington, and Utah.
PAGE: 297 PROFILE: 466

Panther Expedited Services
www.pantherexpedite.com 800-685-0657
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PAGE: 165 PROFILE: 469

Pilot Freight Services
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Trendset Information Systems

www.trendset.com 864-297-9255

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PAGE: 85 **PROFILE:** 511

Intermodal

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www.gocatapult.com 913-232-2389
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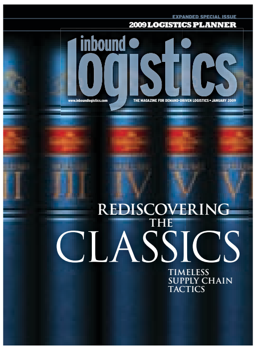

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* The July 2008 issue was a Jesse H. Neal Award Finalist for Best Single Issue
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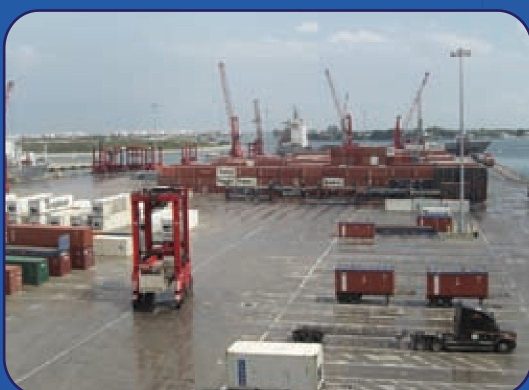

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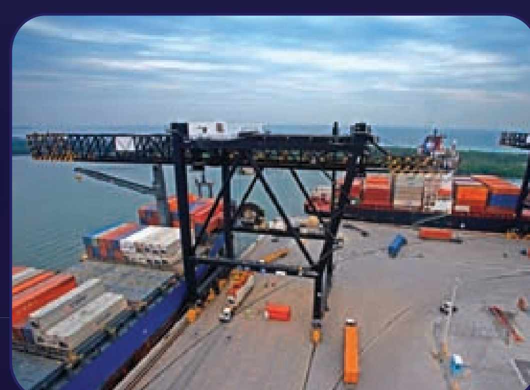

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