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2013
LOGISTICS PLANNER
ISSUE

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Supply Chain Management

THE GREAT EQUALIZER

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INFOCUS

Starting on page 335

LOGISTICS PLANNER 2013

The 2013 Logistics Planner provides detailed information on the segment leaders that stand ready to help you meet your transportation and logistics challenges.

INDEPTH

Keith Biondo

by Keith Biondo | **Publisher**

Supply Chain Force Multipliers

For years, I've wanted the Logistics Planner issue theme to focus on the concept of using inbound logistics as a force multiplier. When I entered the conference room for the Planner issue strategy meeting this year, I was ready to make my case. But when I presented my idea to the editorial team, I was met with blank stares, and a question: What is a force multiplier and what does it have to do with adopting demand-driven logistics practices?

Force multipliers, I explained, are things that reduce the amount of applied force necessary to move an object. The gears on a mountain bike, for example, are a force multiplier, and without them yours truly would not be able to get up the mountain, much less survive getting down.

And, in the military, a force multiplier is something that, when added to an existing capability, makes it more powerful without increasing its size. It can be a new technology or weapon – the UAV or Drone program, for example.

A force multiplier can also be intangible, like an idea. "Perpetual optimism is a force multiplier," said General Colin Powell. Is there a logistics idea that you can use to act as a force multiplier? Yes, the practice of inbound logistics, demand-driven logistics, or supply chain management.

If you look at the cover, you'll know who lost the argument.

Arguments aside, reader success stories based on the adoption of demand-driven logistics ideas have fueled *Inbound Logistics* for more than 30 years. As those articles illustrate, enterprise size does not matter. From the smallest SMB to the Fortune 1000, adopting demand-driven logistics practices and accepting an inbound logistics business philosophy acts as a supply chain force multiplier, projecting disproportionate business power.

Using demand-driven logistics ideas lets you project a greater ability to solve supply chain challenges without significantly expanding your operations. It also amplifies your impact across several business functions, including customer service, overall business efficiency, marketing and sales, financial performance, workforce development, and compliance.

As several articles in this issue illustrate, logistics is comprised of many tangible force multipliers. Taking advantage of an FTZ's capabilities (*page* 185), limiting your logistics liability (*page* 203), and using a pick-to-light or voice-directed solution in your warehouse (*page* 235) will help you project a greater ability to solve your logistics challenges without having to scale up.

Giving customers end-to-end visibility by matching demand signals back through your enterprise to your supply also reduces the need for customer service interventions. In fact, Jeff Bezos said that his best customers are those he never hears from after the sale. Using demand-driven logistics practices was a force multiplier that helped Amazon project market presence, and match and exceed its larger competitors' ability to deliver, even though, at the outset, those competitors held a significant size advantage.

Demand-driven logistics is a force multiplier or, as some say, the great equalizer, especially if your larger or more entrenched competitors are not leveraging the same concepts and ideas you are.

Conversely, those who have not yet adopted demand-driven logistics practices don't have that leverage, and they are placing their enterprises at a competitive disadvantage. ■

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CHECKINGIN

Felecia Stratton

by Felecia Stratton | **Editor**

The Great Equalizer

Tension and drama always permeate the conference room when the *Inbound Logistics* team gathers to decide the theme of the Logistics Planner issue. This year was no different. While we did agree to focus on how demand-driven logistics, or supply chain management, drives competitive advantage, we couldn't agree on how best to present that idea. Tempers flared and blood pressure rose as the editorial team argued to focus on supply chain management as a great equalizer, while the publisher held fast to his position: demand-driven logistics should be featured as a force multiplier.

If you look at the cover, you'll know who won the argument.

But really, we were both right. However you want to define it, supply chain management makes a difference by empowering companies to do more with less (equalizer), and/or to project a stronger competitive force (multiplier). As the articles in this issue demonstrate, the returns are considerable.

Our cover article, *Supply Chain Management: The Great Equalizer (page 68)*, features six different examples of how business logistics managers are leveraging transportation and supply chain management as force multipliers within their respective organizations. Collectively, these examples reveal how the supply chain becomes a platform for tactical and even strategic change as companies look to equalize marketplace imbalances.

Many practitioners also struggle to find balance between customer service, cost, and capacity when managing transportation. As you'll read in Lisa Terry's article, *Trimming Your Transportation Spend (page 131)* shippers, carriers, and their partners are turning to technology and network optimization to tease out hidden costs.

Honing your logistics leadership skills is an important asset not only in terms of career enrichment, but also organizational growth and strength. In *Secrets to Success (page 157)*, Justine Brown outlines the steps logisticians can take to become a logistics workforce multiplier.

Finally, the leading companies featured in the Logistics Planner *(page 335)* are the epitome of force multipliers. Partnering with these leaders can help multiply the power of your supply chain to serve customers better.

It would be impossible to publish this 500-page issue without the dedicated *Inbound Logistics* team: Michael Murphy, Catherine Harden, Joseph O'Reilly, Shawn Kelloway, Mary Brennan, Sonia Casiano, and Jason McDowell, who each did the work of five to provide you with the content you need to help you become a business logistics force to reckon with in 2013. ■

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Taming the Complex Logistics Tiger

Integrated Freight Processing Solutions Enable Effective Management of Transportation Spend

Jeff Carlson
Vice President
North America Trade Sales
Citi Transaction Services

While the logistics of moving products to the customer may be the very lifeblood of most organizations, managing the complexity of these operations and finding ways to contain spend has grown increasingly important in the face of rising transportation costs. According to a 2011 Aberdeen study, fuel costs and customer demands for faster and more frequent deliveries were two of the most pressing concerns for logistics professionals.[1] With more than a trillion dollars being spent on transportation each year, escalating costs are a tiger worthy of taming.

The challenges of collecting supply chain and financial data

The decentralized organizational structure of many global companies and governmental agencies can provide a flexibility that affords a competitive edge; however, it can also create significant challenges when it comes to gaining visibility into supply chain and associated transportation costs. For central logistics planners, the duplication of resources across multiple business units can result in enormous inefficiencies. Planners often face multiple transportation solutions being used at different subsidiaries generating data in different formats, as well as varying payment terms with different business units for the same carrier.

Best-in-class companies and government organizations are overcoming these challenges by automating data collection and analysis on freight costs, and putting processes in place that more effectively utilize spend data and optimize activities around sourcing and payment.

Integrated freight processing key to automating entire supply chain process

Today's highly specialized freight processing tools are allowing astute companies and governments to automate the entire supply chain process. Using an integrated freight processing solution, logistics professionals can simplify the audit, approval and payment of freight-related expenses, making this highly complex process far more manageable.

By aggregating data from a top level, central planners can facilitate improved carrier management, improve their supply chain network and distribution methods, and attain more cost-effective contract terms. Potential savings could be up to five percent of the total transportation budget.

A truly collaborative and integrated freight processing solution can literally be a game changer. Such a solution makes it possible to achieve a reliable, predictable payment schedule, strengthening the relationship between shipper and carrier. With enhanced visibility into expenses and improved collaboration between shipper and carrier, logistics professionals gain greater control over freight spend and supply chain management, which in turn delivers meaningful benefit to the bottom line.

For more information, contact Jeff Carlson at jeffrey.carlson@citi.com

Citi® Integrated Freight Processing (CIFP)

Citi® Integrated Freight Processing is an easy-to-use web-based system that simplifies the invoicing, audit, approval and payment of freight-related expenses by automating the supply chain process. By leveraging the extensive Syncada network, CIFP helps consolidate manual processes into a single automated stream.

Logistics benefits:

- By automating audit, approval and payment processes, costs to pay transportation invoices can be reduced by more than 90% – traditionally a complex and costly freight and transportation invoice and payment process
- Gain global business intelligence which provides immediate supply chain savings
- Complex audits performed automatically, speeding the process and saving hours of manual work
- Interface for resolving disputes with carriers online

Treasury benefits:

- Consolidates transportation invoices effectively extending Days Payables Outstanding (DPO), as well establishing a more predictable payment schedule
- Days Sales Outstanding (DSO) for carriers is greatly reduced from the industry standard of 45 days to approximately three days after approval
- Syncada's network standardized electronic invoicing platform receives invoices from carriers, automatically audits against shippers business rules, then processes payment to the carrier in as little as three days
- One click visibility to accrued freight on any day, giving transportation, accounting, and treasury visibility into expenses

[1] 2011 Transportation Contract, Tender and Spend Management; Bob Heaney, Aberdeen Group, May 2011.

DIALOG

LETTERS TO THE EDITOR

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America's Got SC Talent

Kudos to Justine Brown for her article on millennial engagement (*Closing the Talent Gap, December 2012*). What a tremendous story that brings it all together–and is something that I've been espousing and endorsing for years.

Logistics is more than picking, packing, and shipping. As our industry struggles to recruit and compensate high-caliber employees who understand supply chain, technology and other issues, we need to put talented people on display–assuming they can be recruited and brought into the industry in the first place.

—**Scott Alan Case,** Founder and Chief Storyteller, Position Global

As reported in *Closing the Talent Gap*, the transportation and logistics industry is at a generational crossroads. One need only look at the slowly–perhaps too slowly–changing demographics at industry trade conferences.

While much has been publicized and debated about the looming labor shortage in the trucking industry, there is an emerging talent gap across all areas of supply chain and transportation. I even recall hearing there is a dearth of qualified tugboat pilots, for example.

While university undergraduate and post-graduate programs are quickly catching up to the pace of industry, educating and training tomorrow's leaders, there still needs to be greater focus on vocational programs in community colleges and high schools–much in the way the Future Farmers of America organization has helped support agricultural education at a grassroots level.

Logistics and supply chain is a great career path for all walks of life. There simply needs to be greater mainstream exposure–earlier and more often.

—**Bob Hardin,** via email

A Whole Lotta Love

Victor Hougan's reader profile in the December 2012 issue (*Finding A Love for Logistics*) was enlightening. It emphasized the importance of maintaining a flow-through concept in logistics–starting from a basic operation and utilizing all the different resources available to build synergy and obtain optimum results at each step. "Logistics involves many factors at one time, all working together," as Hougan says in this article.

—**Alan Murakami,** Bakersfield, Calif.

Labor of Great Import

As a long-time global shipper, I have been directly impacted by the recent labor troubles at several U.S. ports. When I compare cost and throughput of major domestic ports with several that I use globally, I'm struck by how much more efficient the latter are. Many U.S. ports are investing in automation, but a recent survey shows that leading global ports are still more efficient than ours by a factor of four.

Now there is the continuing threat of more port labor stoppages. When are we going to get our act together?

—**Anonymous,** via email

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10TIPS

STEP-BY-STEP SOLUTIONS

by Deborah Catalano Ruriani

Improving Supplier Compliance

Developing an effective supplier compliance program requires a well-defined plan. To achieve success quickly, it is crucial to initiate the plan with the right suppliers. Peter Wharton, IBM's team lead for commercial product marketing, offers this advice for ensuring supplier compliance.

1 **Define a successful supplier compliance strategy.** Clearly define the stakes and risks, and how they vary by type of supplier. Expand the program as needed to ensure it continues to cover key compliance strategies, such as pricing and savings, that impact your business.

2 **Identify metrics, thresholds, and targets.** Capture key performance metrics in supplier contracts, and gather input from relationship managers to understand how they measure supplier performance. Use the information to establish metrics, and validate that they are aligned with the overall business strategy.

3 **Provide a framework on which to build a successful relationship.** Document and publish an online supplier's compliance guide explaining your standards and specifications.

4 **Connect electronically to your suppliers.** Take advantage of technology to reduce costs and improve efficiency by connecting with your suppliers using business-to-business integration or Web portals.

5 **Achieve early success.** Implement your compliance program with suppliers whose involvement will provide the biggest benefit to your organization. Then share the success internally and externally to gain more buy-in.

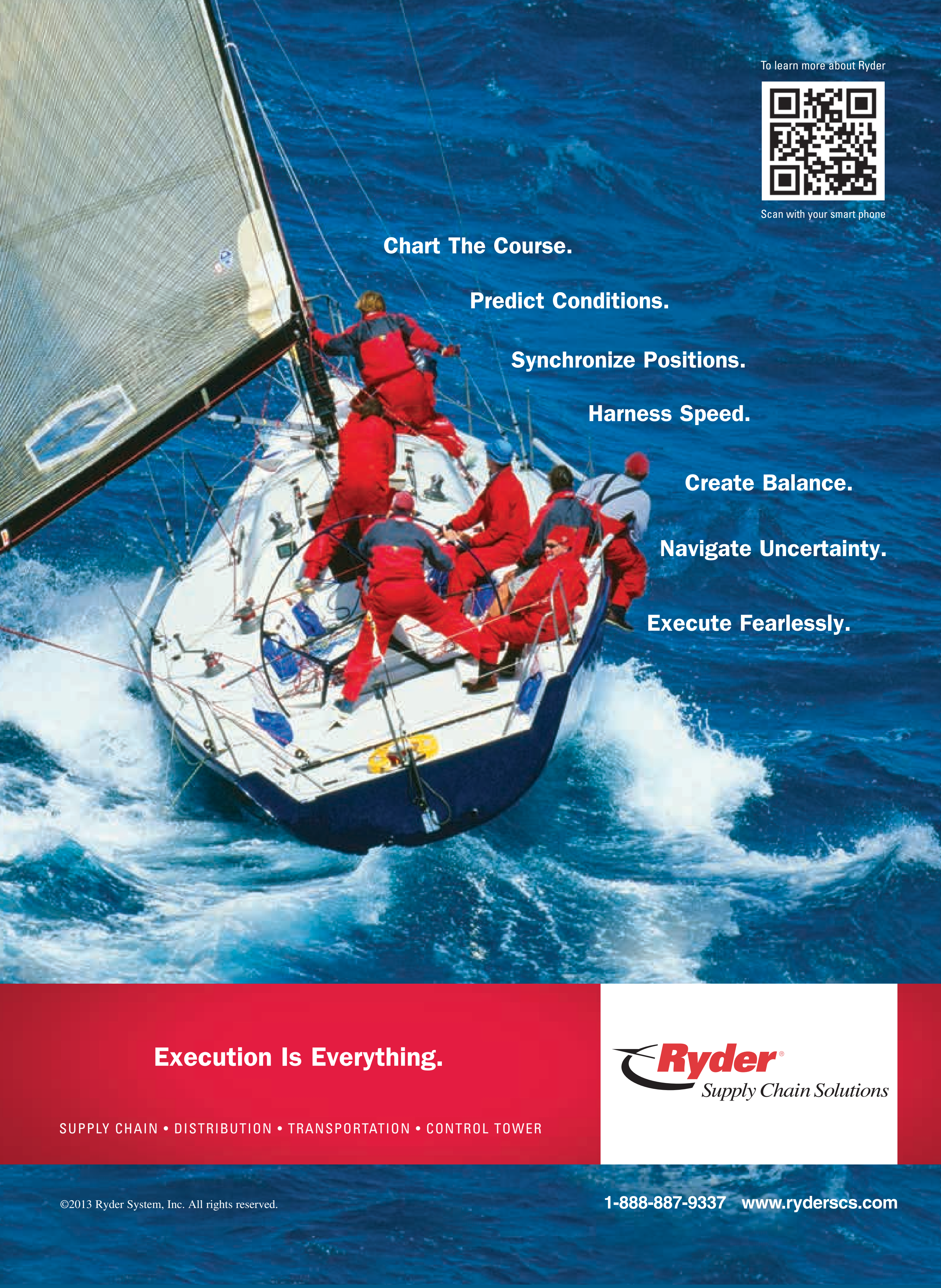
6 **Foster an environment of collaboration.** Rather than holding quarterly or annual reviews to discuss problems, share performance data in real time so suppliers can adjust to issues immediately. Providing real-time data gives all partners an opportunity to collaborate on a higher level.

7 **Manage supplier risk.** Be proactive in mitigating supplier risk to ensure that a supplier does not disrupt your manufacturing/fulfillment process. Employ best-in-class processes and technology to help collect supplier intelligence in one place, and assess the risks of key suppliers. Then analyze supplier risk based on potential impact.

8 **Take a data-driven approach.** Use automation and performance analytics to capture a current view and a forecast of what is most likely to happen. Employ prescriptive analytics to provide the best decision, rather than relying on institutional knowledge to resolve questions.

9 **Implement continuous tracking.** Supplier performance management is not a one-time event. Continually track performance to ensure previously identified gaps were remediated, and to keep the focus on continuous benchmarking and improvement.

10 **Standardize the process.** Build and automate compliance requirements into your sourcing and procurement process and contracts so that all new suppliers are immediately integrated into the program. ■



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as told to Merrill Douglas

William Gregory: Into Africa

William Gregory has served as global supply chain coordinator at VT iDirect, in Herndon, Va., since 2012. VT iDirect is a global vendor of technology for satellite-based Internet Protocol (IP) communications.

RESPONSIBILITIES

International shipping, customs, and regulatory compliance; liaison with freight forwarders; subject matter expert for Middle East and Africa.

EXPERIENCE

Intern, Samuel Shapiro and Company; international logistics coordinator, 180s LLC.

EDUCATION

College of Southern Maryland, A.A., Journalism, 2007; University of Baltimore, B.A., Jurisprudence, 2009; Georgetown University, M.A., International Affairs, 2012.

I FOUND MY WAY TO SUPPLY CHAIN MANAGEMENT through my undergraduate studies in maritime law. At first, I was mainly interested in tank ships. But while interning at Samuel Shapiro and Company—a non-vessel-owning common carrier, customs broker, and freight forwarder based in Baltimore—I found that container shipping can be just as interesting and fun.

My current company, VT iDirect, provides satellite communications hardware and software for customers around the world in industries such as energy, mining, maritime shipping, and telecommunications. Some of its products—including remotes, modems, and routers—are manufactured in Malaysia.

Many of the company's high-tech products are made by contract manufacturers in Idaho, and we contract with manufacturers in Texas and North Carolina for dish antennas – some of which are about the size of a small car.

Filling a customer's order usually means coordinating shipments of components from multiple locations. We work with freight forwarders to ensure the best shipping options in each region we serve.

When I joined VT iDirect, the company already did business in Africa and the Middle East, but didn't have a set of standard operating procedures for that region. Documenting those procedures was among my first tasks.

It was challenging because Africa is such a dynamic environment. I spent six weeks writing the manual, which totaled more than 100 pages. And I needed to edit it soon after, because Africa's business conditions change so quickly.

A key part of the challenge involves trade compliance. Each country in the region has its own requirements, and you

The Big Questions

What do you do to recharge your batteries?
Work out—I have a strict gym schedule that helps clear my mind. I also cook, and now that I'm done with grad school I want to get back to sailing.

Scariest career decision?
Enrolling in grad school full-time while continuing to work full-time.

What's your alter ego dream job?
Captain of a tank ship.

Dream trip?
To go to the Monaco Grand Prix. I'm a huge Formula One fan.

What's on your Bucket List?
Sailing around Cape Horn. It's the Mount Everest for sailors—it tests everything you have.

must understand them all. For example, while most European countries eliminated pre-shipment inspections decades ago, many African countries still require them to ensure vendors don't sell them obsolete or broken equipment. But arranging an inspection by Bureau Veritas – a testing, inspection, and certification services provider – or other certified organization can take up to one week. That poses an obvious challenge when customers want product delivered in 10 days.

In early 2012, I spent two weeks in Dubai, meeting with VT iDirect's partners, identifying challenges there, and taking a continuing education class. Connecting with the partners that handle our products, and discussing the challenges they face every day, helped us put together a fulfillment and logistics plan for that region.

In an area where business depends so much on relationships, it's important for your partners to know that you have their best interests in mind. If they know that, they'll trust you, and they'll help you when needed.

Some exciting new developments at VT iDirect are making my job even more interesting and complex. We're introducing new hardware and software that will make our technology affordable to smaller customers who want to maintain connectivity in places where they can't rely on landline infrastructure. I'll determine how to meet the growing need for connectivity in challenging parts of the world. ■

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Christopher P. Mazza, Senior Vice President of Business Development, IAS
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Connectivity-Visibility-Optimization: Three Keys To a Successful Supply Chain Trading Partner Network

2013 has been called the Year of the Network by numerous supply chain and transportation industry thought leaders. A well-oiled trading partner network allows one-to-many and many-to-many partners to collaborate and communicate using a single source of truth garnered from real-time information. Harnessing this collective power provides a competitive advantage as well as the flexibility needed to maneuver in an increasingly competitive world. Using a reliable platform that coordinates and streamlines business processes across a global network can lead to faster, better decisions; increased profitability; and higher customer satisfaction.

So, how can a company build a successful supply chain trading partner network? It comes down to three steps:

1. **Connectivity –** unite disparate systems and trading partners
2. **Visibility –** access and understand the data in the network
3. **Optimization –** eliminate costs and increase efficiency

The extent to which a company can optimize their activities, processes, and services depends directly on the quality of connectivity and the level of visibility achieved.

Speaking a common language

Within a trading network, partners must be able to connect quickly and easily with standard communication formats. Cloud-based technologies can offer security, scalability, configurability, and reliability – key components of a network designed to accurately exchange critical business information among all partners regardless of technological capability. Companies can use EDI to receive information from a range of sources and to transmit their own data to a host of other technologies. With solutions that provide a web portal in addition to EDI, companies can connect partners across an even more diverse array of technological sophistication. Essentially, using a neutral, well-connected cloud network allows trading partners to choose what technology they prefer and provides the translations necessary to keep everyone on the same page. Additionally, cloud solutions speed the provisioning of new service providers, lower IT implementation costs, and reduce complexity by managing only a single point of connection to the global network.

Connectivity leads to visibility

The network relies on a robust technology platform designed to manage thousands of service provider participants and to capture, process, and store the millions of transport events taking place. By connecting to such a network, companies gain a wealth of actionable business data. Gaining visibility of events, work orders, transport assignments, business processes, equipment utilization, trading partner availability, invoices, and more leads to a better understanding of transportation operations. Companies are able to provide up-to-date status visibility and tracing of shipments from origin through to final proof of delivery. Customers are happier knowing that everything possible is being done to deliver their goods to the right location at the right time.

Optimization is where the money meets the road

Connectivity and visibility lay the foundation for optimization, where companies garner real savings. In addition to the first order benefits of visibility, accessible data provides the foundation to analytics. Business intelligence can provide historical data trends, help track key performance indicators, and allow drill down to find the correlations that can transform a business. Analysis of this new information can uncover not only why something happened, but also illuminate the path to improved utilization of transportation assets, better vendor management, and lower costs. Each of these optimizations can result in significant savings.

One form of transportation optimization – called a street-turn, matchback, or triangulation - reduces non-value-add empty miles by matching import containers to exports to minimize the repositioning of empty containers. With these optimized moves, rather than two round trips, carriers make a triangular move with one shortened empty leg. Storage and handling costs are reduced; driver time is better utilized; idle times are lowered; and carbon emissions are decreased. Finding street-turn opportunities relies not only on a matching algorithm, but even more critically upon the connectivity and visibility outlined above. This optimization is one of the major profitability options for ocean carriers and 3PLs providing container-based transportation services.

So, build a network on cloud-based technology that provides a single collaborative, shared version of the truth for all trading partners, which increases visibility and control. Integration and collaboration across multiple parties enables the community to manage and optimize transportation events, which results in increased savings, improved efficiencies, and better customer satisfaction.


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Robert Martichenko, CEO of LeanCor Supply Chain Group
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The Lean Supply Chain: A Field of Opportunity

Businesses all around the world are familiar with the value of lean principles. The current conditions of globalization and competitive environments require operating a lean business now more than ever. Lean principles teach to eliminate waste and focus only on those things that result in customer value – ultimately building business cultures that focus on problem solving. Once you have every team member empowered to solve problems every day, the results are extraordinary.

While many companies have embraced lean in manufacturing processes, they have yet to un-tap the wealth of opportunity lean brings to the supply chain. Senior executives often acknowledge lean can add value, but many still haven't moved past the education stage into full-scale lean supply chain implementation. One reason may be that they haven't made the mental leap as to how to accomplish this task. The Lean Supply Chain is a system of interconnected and interdependent forces that operate in unison to accomplish overarching supply chain objectives. These objectives are accomplished in alignment with 8 key principles, these principles are:

1. **Eliminate all waste in the supply chain so that only value remains.** Creating a smooth flow of products downstream in a supply chain requires all departments and functions in the organization to work in harmony. The seven types of waste in manufacturing are well known. In the supply chain, the seven wastes translate to:
   - *System complexity* – additional, unnecessary, steps and confusing processes
   - *Lead time* – excessive wait times
   - *Transport* – unnecessary movement of product
   - *Space* – holding places for unnecessary inventory
   - *Inventory* – inactive raw, wip, or finished goods
   - *Human effort* – activity that does not add value
   - *Packaging* – containers that transport air or allow damage
2. **Make customer consumption visible to all members of the supply chain.** Flow in the supply chain begins with customer consumption. Visibility to customer consumption for all supply chain partners is critical for acting as the "pacemaker" of the supply chain.
3. **Reduce lead time.** Reducing inbound and outbound logistics gets us closer to customer demand which results in reduced reliance on forecasting, increased flexibility and reduced waste of "overproduction".
4. **Create level flow.** Leveling the flow of material and information results in a supply chain with significantly less waste at all nodes in the system.
5. **Use pull systems.** Pull systems reduce wasteful complexity in planning and overproduction that can occur with computer-based software programs such as material resource planning (MRP), and they permit visual control of material flow in the supply chain.
6. **Increase velocity and reduce variation.** Fulfilling customer demand through delivery of smaller shipments more frequently increases velocity. This in turn helps to reduce inventories and lead times and allows you to more easily adjust delivery to meet actual customer consumption.
7. **Collaborate and use process discipline.** When all members of the supply chain can see if they are operating in takt with customer consumption, they can more easily collaborate to identify problems, determine root causes, and develop appropriate countermeasures.
8. **Focus on total cost of fulfillment.** Make decisions that will meet customer expectations at the lowest possible total cost–no matter where they occur in the supply chain. This means eliminating decisions that benefit only one part of the stream at the expense of others. This is the real challenge, but can be achieved when all members of the supply chain share in operational and financial benefits when waste is eliminated.

Lean Supply Chain Implementation Results

LeanCor customers have gained the benefits of:

- Increased customer fill rate and customer satisfaction
- Supply chain visibility and increased performance measurement
- Inventory velocity and inventory reduction
- Distribution center and transportation cost reduction
- Increased supplier performance
- Reduction in "Total Cost" of the entire supply chain

The New Role of the 3PL

The new role of the 3PL will not just be to transport and store, but rather to serve as a trusted partner in the lean journey by identifying problems, implementing solutions, and adding value in global and complex supply chains. The relationship with the 3PL needs to move from transactional to one of long term partnership and commitment.

LeanCor is a true partner in third party logistics that delivers operational improvement and measurable financial results. Unlike other 3PL's, LeanCor offers a unique combination of third party logistics services, hands-on consulting, and training and education. This integrated portfolio of services help organizations eliminate waste, drive down costs, and instill a problem-solving culture across their supply chain. For success stories and more information on inbound logistics, transportation management, and dedicated warehousing services, visit www.leancor.com.

LOGISTICS knowledgebase©

John Wagner Jr., President, Wagner Logistics
800-817-1264 • john.wagner@wagnerlogistics.com

Outsourcing for Newbies, and a Refresher for All

While Fortune 500 companies routinely outsource everything from distribution centers and transportation management to packaging, freight audit/payment and other functions, your up-and-coming company may only need to outsource a single function of its operations, perhaps a combination. It's rarely an easy decision process, but the objective is always clear.

Growing companies need access to better technology, engineering and IT staff. To preserve working capital and promote flexibility, many choose to leverage the capabilities of a third-party-logistics (3PL) provider for carrier spend, facility occupancy and more.

To help you get the most out of this experience, I offer a few points to ponder as you move forward.

Choose Carefully – As you evaluate the pool of available providers, look for one that matches up well with your own company's culture and size. Global companies tend to use global providers, so take a clue and look at doing business with those that have the resources to fill in the gaps in your company, not duplicate them.

After the sales effort ends and the real business begins, you want a provider who views your operation as a critical revenue stream. This commitment is most often reflected in the availability of extra truck capacity and staffing during peak periods.

There is plenty of advice out there about making sure the 3PL is financially stable and has the right capabilities to fit your needs. However, I encourage going beyond in your evaluation by engaging the senior management team and getting to know them. Make sure they are in your foxhole and truly committed. If the service provider is a public company or owned by a private equity firm, they require growth to satisfy investors – not a bad thing; just be sure you are more than someone's sales quota.

Plan, Plan, Execute – Once you have the right partner, don't shortchange the planning process. Engage in a collaborative project plan that breaks out all the elements, assigns responsibilities for both parties, and makes firm time commitments, all of which drive accountability. Take more time than you think you will need in the planning phase, and make sure the technology links are well designed and tested. That way, you can begin operations with confidence, knowing good data is flowing in both directions.

Commitment and Resource Allocation – Be sure everyone on the project is truly committed to the outsourcing decision. Hurt feelings, a sense of lost control, authority, or simply feeling like the job should be kept "in house" can derail an implementation. Often, strong leadership is required to overcome emotion. If these feelings pervade within your management team, then don't outsource.

Don't skimp on the talent allocation to implement, either. People get stressed when an implementation is added to their plate of regular tasks, particularly in the IT arena. Create realistic, reasonable timelines to ensure both sides are engaged and committed to meeting the established milestones.

What Does Success Look Like? – Don't go overboard on the metrics at first. Simply select six areas to measure and track. These key performance indicators (KPIs) are your friends. They will drive your continuous process improvement effort, provide discussion topics for cost reduction, and establish expectations. People like to know when they are winning, so make a scorecard.

Strive for Mutual Success – Include a "no-surprise" policy and create an atmosphere of openness between you and your 3PL provider. Share your sales plan so the provider can staff up when you know orders will peak. Are more space, truck capacity, or other resources needed to ensure your customers are satisfied? Like most of the above items, this goes both ways. You have the right to hear straight talk if your provider sees anything that might hamper performance.

The decision to outsource any aspect of your operation is rarely easy, but sticking to these fundamental guidelines will foster not only a better experience, but also more thorough execution. By selecting the right partner and implementation team, setting expectations, and aligning culture, you have a formula for a successful project. Whether it is a multi-channel fulfillment operation, transportation management program, or plant materials management program, I can tell you it's a formula that works.

LOGISTICS knowledgebase©

Ray Greer, President, BNSF Logistics
For more information on BNSF Logistics, see our Planner Profile in this issue.

Using Strategic Acquisitions to Satisfy Your Customer Base

Global shippers continue to face supply chain challenges that seem to change more often and more dramatically than ever before. They require logistics partners who can react to these changes and help them navigate the complexities of global trade. Shippers want 3PL partners that not only responsively evolve service networks and capabilities to flex with the market, but also can anticipate and be ready to meet future service requirements.

For any logistics partner to be successful and compete on a global scale in today's dynamic marketplace, they must focus first and foremost on the needs of the customer. Often this requires investment in expanded service offerings and capabilities that align with market demands. As a Burlington Northern Santa Fe, LLC and Berkshire Hathaway company, BNSF Logistics not only has the willingness to invest in expanding network and service capabilities, we have the financial depth and resources to do so.

One area where BNSF Logistics recognized growing customer need was the global project cargo arena. Project cargo is generally defined as the movement of over-dimensional and overweight shipments requiring specialized handling and equipment. We believe there is an Industrial Renaissance underway globally, as emerging economies invest in infrastructure development and established economies refurbish much of theirs. These investments are driving project cargo volumes that significantly outpace the general economy and could be maintained for the next 20 years. In 2012, global volume in project cargo rose to more than 300 million tonnes. Current projections list project cargo volumes growing more than 50 tonnes over the next two years in industries such as mining, oil & gas, chemicals, and renewable energy. With this volume of tonnage shipping globally, and with the market showing steady growth each year, it's difficult for third-party logistics companies not to take notice. And BNSF Logistics couldn't help but notice something else – the project cargo market is highly fragmented, often lacking world-class resources and standards of performance expected by best logistics practitioners. Further, Federal Corrupt Practices Act requirements and the international activity that project cargo engages, could be at conflict. Our customers told us they needed a North American based provider, with uncompromising commitments to integrity and ethics, to help them navigate in challenging environments.

So, when our customers expressed their needs in these areas, we didn't just listen… we acted and we invested. After conducting extensive market research, and doing appropriate due diligence, we identified Toronto-based Albacor Shipping Inc. as a leader in the global project cargo market. Albacor Shipping established operations in Canada and the United States in 1998, expanded to Europe in 2003, and recently acquired eight operating locations throughout Russia. We took steps to acquire the company, and through that acquisition significantly extended our physical reach and enriched our organizational expertise in project cargo capabilities. Acquiring Albacor expanded our North American presence, and enabled us to answer our customers' call for expansion into new foreign markets.

We also listened – and acted – when our customers asked for help with their global expansion projects that required more expedited service solutions. Within days of the Albacor acquisition, we purchased EP-Team, a Flower Mound, Texas-based company that operates multiple locations in the United States and globally. EP-Team occupies a specialized, exciting, and demanding space in the project cargo market that perfectly fills one of the few gaps in the BNSF Logistics portfolio. EP-Team has experience and global reach in the expedited project cargo arena and proven logistics capabilities in moving time-critical, high-value, and often oversized cargoes, serving the Oil & Gas, Defense, Space & Aviation industries.

By combining the assets of Albacor Shipping and EP-Team's offices and unique expertise with BNSF Logistics' extensive resources and financial depth, our customers now have access to unprecedented project cargo logistics service options, along with the assurance that managing these projects anywhere in the world can be done with a commitment to the standards and responsibilities that a strong and reputable 3PL with deep North American roots can provide.

These two acquisitions are just a means to an end – and that end is providing BNSF Logistics' customers with a comprehensive suite of logistics services that span both the globe and the entire spectrum of our customers' supply chain activities.

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NOTED

THE SUPPLY CHAIN IN BRIEF

SEALED DEALS

ChemLogix, a third-party logistics provider for the chemical industry, selected the **TICONTRACT** Web-based logistics and freight sourcing solution to support carrier rate bid execution and management for all transport modes. ChemLogix is also evaluating TICONTRACT on its potential capabilities to support broader carrier management efforts, including contract management and integration with TMS platforms.

Crescent Electric, an electrical hardware and supply distributor, chose **Epicor Software's** *Eclipse* as its new ERP solution. *Eclipse* replaces a custom in-house ERP that the distributor has used since 1965. Crescent expects the new system to increase efficiency and streamline processes, allowing for optimized customer service.

J.B. Hunt chose **LLamasoft's** *Supply Chain Guru* design software to help simulate and optimize its supply chain networks. The new software allows J.B. Hunt to offer improved customer service, drive down costs, and increase value while operating as an extension of each customer's enterprise.

▲Luggage retailer **Samsonite** chose **Kerry Logistics** to manage its supply chain operations in Thailand. The contract comprises warehousing, value-added services, pick and pack, and local transportation. Kerry Logistics delivers Samsonite products to about 40 department stores and retail outlets in Bangkok, and major islands and cities including Phuket, Pattaya, and Chiangmai.

Essex Group Inc., a manufacturer of wire and cable products and accessories, implemented **Transplace's** Transportation Management System (TMS) to optimize and manage all North American inbound shipments. The TMS allows Essex Group to improve carrier selection and communication, and drive cost savings. The company is expanding its use of Transplace's TMS for all outbound shipments to identify consolidation and mode optimization opportunities, improve customer service, and achieve greater cost savings.

Phillips 66 signed a five-year contract with **Global Partners LP** to have crude oil delivered from North Dakota to its New Jersey refinery. Global Partners will use its rail transloading, logistics, and transportation system to deliver about 91 million barrels of crude oil—or approximately 50,000 barrels a day—to the Phillips 66 refinery over the life of the contract.

SEALED DEALS

▼ **Thermo King's** Precedent trailer platform was selected by refrigerated carrier **C.R. England** as part of a three-year agreement. The carrier will use the S-600 Precedent in over-the-road, intermodal, and rail applications.

FedEx Express signed a contract with **Boeing** to add four 767 freighters to the FedEx fleet. The order is part of a FedEx initiative to modernize its cargo planes. The new freighters will replace less efficient cargo airplanes, and provide fuel and maintenance cost savings. The new 767s will also allow FedEx to develop new long-haul, regional, and feeder markets.

GUESS?, a global brand and trade retailer, implemented **TradeCard's** supply chain collaboration and global trade platform in Europe. TradeCard provides an automated environment for GUESS? to communicate orders and settlements with its trading partners.

Beverage distributor **Quality Brands of Omaha** implemented **C3 Solutions'** *C3 Reservations* online dock scheduling system to manage all inbound shipments. The new software allows Quality Brands to increase visibility to incoming orders, remove bottlenecks that create lengthy driver wait times, and measure the receiving team's productivity.

sound*byte*

"Just about every great new project couples a brilliant strategy with impossible logistics that somehow get handled."

–Seth Godin, author and marketing guru

recognition

Con-way Truckload received **Sonoco's Carrier of the Year Award** for the third consecutive year. To earn the distinction, Con-way Truckload uncovered and developed growth opportunities, worked with Sonoco to help solve immediate needs, and demonstrated service excellence through on-time delivery, communication, and service options.

The U.S. Environmental Protection Agency recognized **Dart Transit** with a **SmartWay Excellence Award** for having the lowest CO_2, NO_x, and PM emissions levels among SmartWay partners in the truckload dry van category. Dart accomplished this with its new high-mpg Eco Fleet, as well as its efforts with a small fleet of natural gas-powered tractors.

H-E-B Mexico's Supply Chain Division honored **Damco Mexico** with the **Strategic Partner of the Year Award** in recognition of outstanding service in cost savings, overweight container handling, and prompt emergency response.

► **John Ruan III,** chairman of Ruan Transportation Management, was inducted into the **Iowa Business Hall of Fame,** which honors Iowans who contribute to developing and enhancing the state's business climate. Ruan serves as chairman of The World Food Prize Foundation, Concentric International, City Center Corporation, and BTC Financial Corporation and Bankers Trust Company NA.

Menlo Worldwide Logistics, Southwest Airlines, and **The Emirates Group** received **Oracle's Travel and Transportation Industry Excellence Awards** for 2012. The annual awards recognize successful transformation and leadership in transportation.

E2open, a provider of cloud-based solutions for global trading networks, was named a winner in the **2012 Supply Chain Distinction Awards North America's** solution implementation category. The awards celebrate excellence across supply chain management functions.

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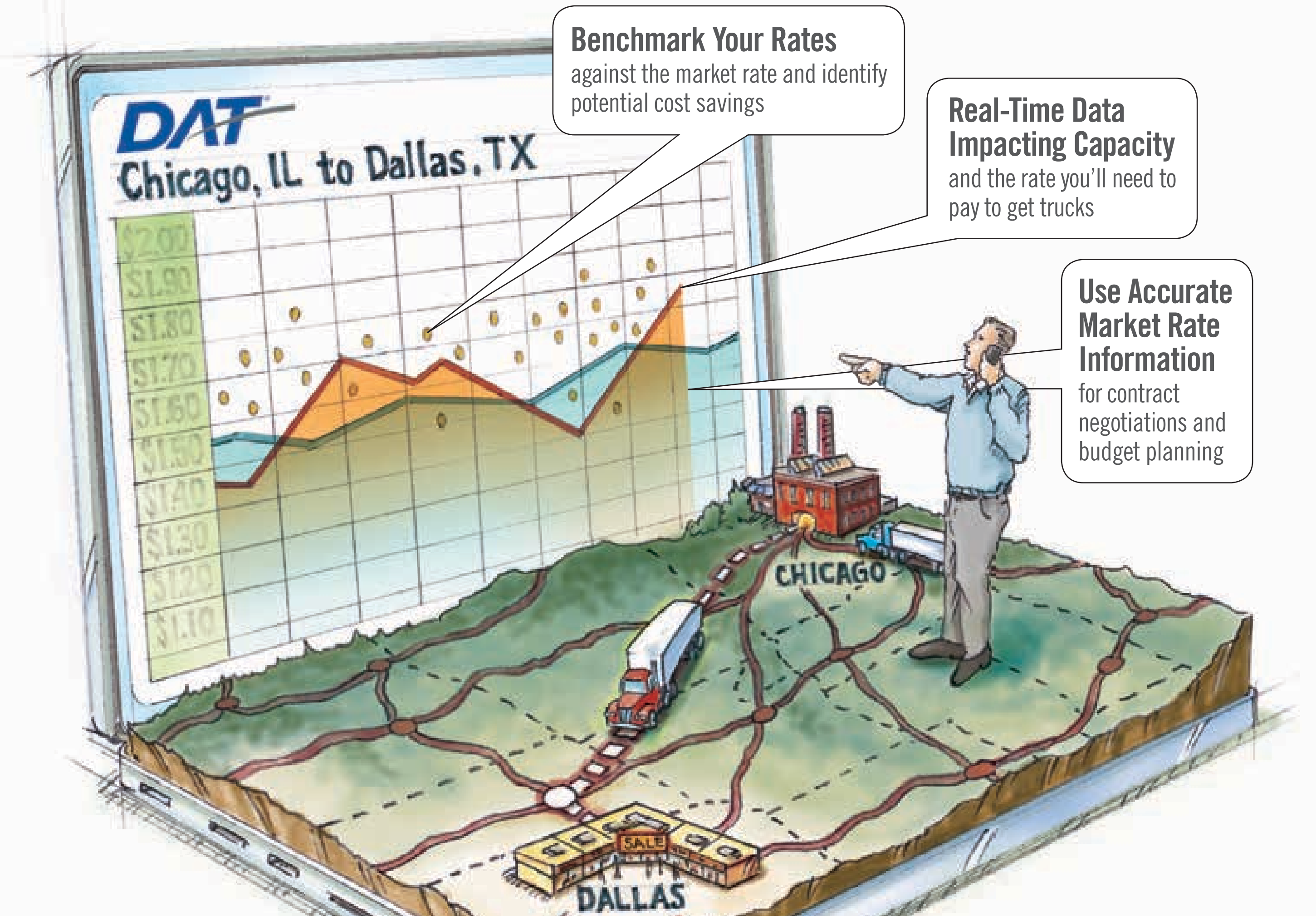

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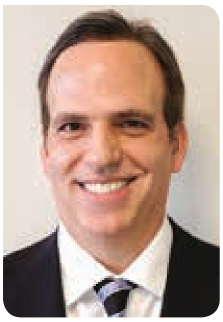
Today's Data for Transportation Decision-Makers

UP THE CHAIN

CarTrawler, a gateway to worldwide car rental distribution for the travel industry, named seven-year Tour America veteran **Brian Ingarfield** as its chief procurement officer. In his new position, Ingarfield manages the development of the global car-rental supply base, which will support the company's growth.



◀ **David Colo** was appointed vice president of supply chain at **Diamond Foods,** owner of brands such as Pop Secret popcorn and Kettle Chips. Colo's responsibilities involve expanding and solidifying Diamond's supply chain, and identifying procurement, operations, and logistics cost savings.

General Motors appointed **Grace Lieblein** vice president of global purchasing and supply chain. Lieblein oversees GM's annual purchasing budget, and controls interactions with more than 3,000 parts and services suppliers.

Kennametal Inc. named **Peter Dragich** vice president of integrated supply chain and logistics. In this role, Dragich leads the company's global manufacturing operations, distribution centers, and reconditioning facilities. He is also responsible for supply chain management; supplier sourcing; advanced manufacturing engineering; and environmental, health, and safety initiatives.

GREEN SEEDS

Kohl's Department Stores activated its largest solar project to date at its one-million-square-foot e-commerce fulfillment center in Edgewood, Md., which recently earned LEED certification. The 8,360-panel rooftop solar array will generate more than three million kilowatts of electricity annually, and provide more than 40 percent of the facility's energy.

m&a

EPES Logistics Services, a third-party logistics and freight management company, acquired **Cargo Masters.** The acquisition allows EPES to provide Mexico and Canada service, flatbed, freight management, less-than-truckload, and expedited shipping, as well as extended national coverage.

Aldata, a retail and distribution optimization company, merged with **EYC,** a customer engagement specialist. Both companies were part of the Symphony Technology Group, and have emerged as Symphony EYC. The combined businesses operate in more than 25,000 stores in Europe, the Americas, and Asia, and serve approximately 1,000 clients.

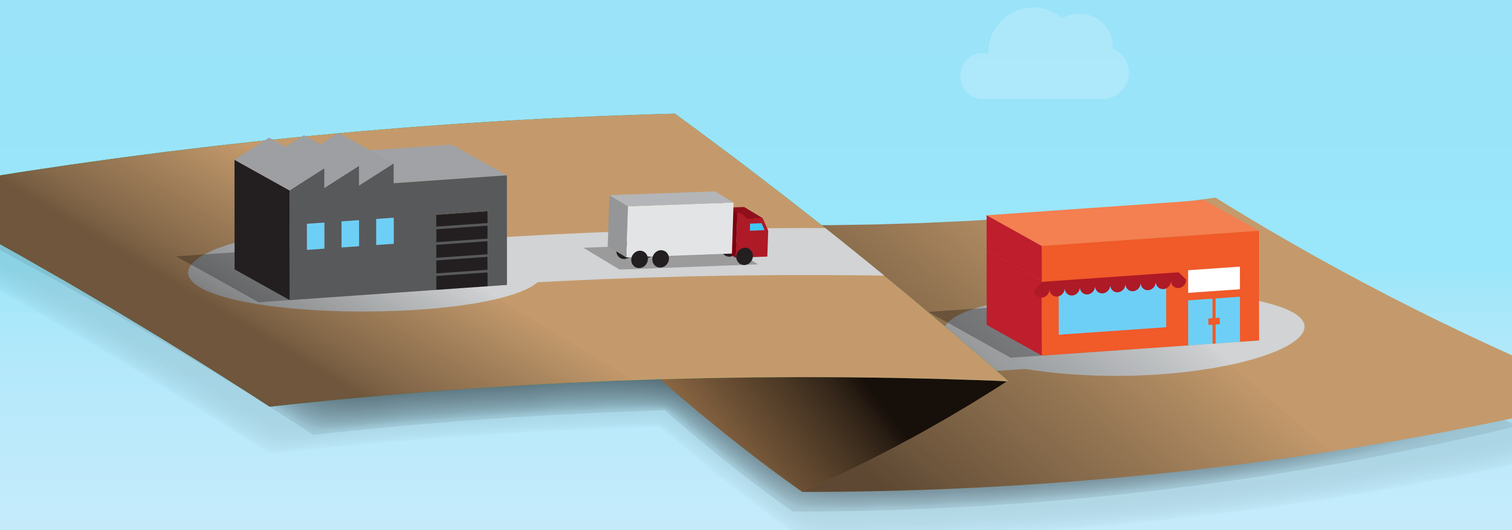
Third-party logistics provider **Wheels Group** acquired **MSM Group of Cos.,** a freight broker and forwarder. The acquisition adds a well-established multinational LTL component to Wheels' service portfolio. MSM offers LTL broker, forwarding, and consolidation services in the United States and Canada.

Transplace, a transportation management provider, acquired Canadian-based logistics services company **Torus Freight Systems.** Bringing Torus onboard enables Transplace to gain a strong presence in Canada, as well as expand its current customer base and offer more services to existing customers.

Technology
Surprises
Safety
Regulation
It's What You Don't Know
That Can Hurt You.
Compliance
Capital Investment
Capacity
Productivity

TRENDS

SHAPING THE FUTURE OF LOGISTICS



It's a Smaller World After All

The shrinking distance between demand and supply is triggering a trend toward inter-regional supply chains and creating a globalization tipping point, according to research by Philadelphia-based third-party logistics provider BDP International, its Centrix consulting unit, and Temple University's Fox School of Business.

by Joseph O'Reilly

Real-time communication technology has greatly increased global connectivity—even compared to just one decade ago. The Internet, e-commerce, social media, and other technologies have opened new doors for companies to source and sell seamlessly across borders.

But as developing countries emerge and developed economies mature, there's reason to suggest globalization may be beginning to reverse course—and that some companies are reining in their supply chains to reduce costs, avert risk, and increase demand responsiveness.

Global trade flows from Eastern manufacturers to Western consumers are shifting to shorter inter-regional routes as companies seek to reduce the distance between production and consumption, reports the study.

BDP's research surveyed more than 200 companies around the world with annual revenues ranging from $100 million to more than $10 billion. Of the supply chain executives polled, 87 percent indicate their companies are considering, or have already begun, moving production closer to end markets, sourcing and selling goods within the same hemisphere.

"The audience sample and respondents represent supply chain, logistics, and transportation decision-makers," explains Arnie Bornstein, BDP's executive director of marketing and corporate communications. "So it's not surprising that out of 12 different priorities, costs were among the highest considerations—specifically related to total landed costs, longer transit times, and rising wages in traditional sourcing countries."

BDP's survey findings mirror results reported elsewhere. In 2012, Boston Consulting Group documented that more than one-third of U.S.-based manufacturing executives at companies with sales greater than $1 billion are planning to bring production back to the United States from China. The top factors for this strategy change include labor costs, product quality, ease of doing business, and proximity to customers.

Bornstein cites three main reasons for this shift: emerging countries are starting to trade with one another, shortening world trade flows; a growing middle class in Asia, Latin America, and the Middle East is driving demand for consumer goods; and it makes both operational and economic sense to maintain shorter supply chains.

Taking a Risk

Risk management is also driving some supply chain regionalization, but is a lower priority among respondents, and dovetails with demand for shorter transportation distances. Longer transit times increase the chance of potential anomalies caused by weather, labor disruptions, capacity availability, and countless other exceptions.

"Business continuity is a high priority," he says. "Recent natural disasters brought supply chain risk management into sharp focus."

Risk aside, cost remains a fundamental consideration as companies seek to align global sourcing networks with changing demand patterns. Increasing supply chain complexity only amplifies the value companies can derive by taking an inter-regional approach.

The automotive industry offers a good example, because car manufacturers have always been international in scope, sourcing and producing parts all over the world.

"While parts flows are largely global, and will continue to be so, there is an increased trend toward regionalization in terms of final assembly," says Bill Garrett, CEO of VASCOR, a privately held joint venture between APL Logistics and Fujitrans Corporation. The Georgetown, Ky.-based 3PL provides supply chain services to manufacturers, Class I railroads, and other key automotive industry players.

(continued on page 38)

Google, Motorola Mobility Rewire Supply Chain

Both Google and Motorola have established reputations for enabling mobility. But Google upped the ante when it acquired the smartphone and tablet-manufacturing division Motorola Mobility in 2011. Now the search engine conglomerate is looking to adapt its manufacturing and sourcing footprint in a similar fashion by divesting assets to a third-party partner.

Flextronics, a Singapore-based electronics manufacturing services company, announced it will purchase Motorola's production facility in Tianjin, China, and assume the management and operation of its Jaguariuna, Brazil, plant. The agreement also includes manufacturing and services for Android and other mobile devices.

"The agreement with Flextronics is an important step forward for us in transforming our overall supply chain into a competitive advantage for Motorola Mobility," says Mark Randall, senior vice president, supply chain and operations for Motorola Mobility. "Flextronics has been our partner for many years, and its manufacturing expertise and experience will enable us to focus on other areas of the supply chain where we can add the most value."

Motorola plans to hand off phone production in Tianjin, China, and Jaguariuna, Brazil, to manufacturing services company Flextronics.

The Devil is in the Detailing

When Tata Motors unveiled the $2,000 Nano in 2009, the Indian automotive manufacturer demonstrated how stripping away amenities and safety features impacted the overall cost and complexity of sourcing and assembling a car. While Tata's endeavor was extreme, in the wake of the U.S. automotive collapse, many manufacturers similarly focused attention on design and material tweaks to capture savings and address sustainability goals. Ford Motor Company is the latest example of this trend.

In a partnership with chemical company BASF, the auto manufacturer is tinkering with the trim around the window switch in the 2013 Ford Fusion—following similar changes the company has made in the interior design of other models as it transitions from conventional plastics to more sustainable materials. A little piece of polymer can make all the difference.

Traditionally, molded plastic pieces have been painted with a high-gloss finish to deliver both fashionable design and tough-as-nails durability. But thanks to a new breakthrough in materials from supplier BASF, Ford is able to skip that step, thereby saving costs and reducing the environmental impact during production of the 2013 Fusion.

The two companies developed a resin that replaces painting. The result is a 50-percent cost reduction in component price. But that's only part of the story. Previously, the plastic was shipped from the manufacturer in Kalamazoo, Mich., to another plant in Grand Rapids, where it was painted, then shipped back.

A small design change to the 2013 Ford Fusion drives big manufacturing and transportation savings for the automaker, and delivers environmental benefits.

The process change reduced volatile organic compounds (VOC) by eliminating the paint, and cut transportation fuel use, carbon emissions, and transit time by cutting out a 128-mile leg between the two facilities.

The sum effect? Each truck move uses roughly 18 gallons of diesel fuel. The trip is made three days a week, which requires 54 gallons of fuel. Fifty weeks per year of production means Ford is saving 2,700 gallons of diesel and eliminating 59,400 pounds of CO_2 from Fusion production annually—all by changing the way it produces a small part.

"We need to leave no stone unturned in our continuous quest to make auto manufacturing as environmentally friendly as possible," says Robert Bedard, a Ford engineer. "This improved resin saves Ford significant money, but it also helps eliminate VOC from being released into the atmosphere, because the application of clear-coat paint is no longer required.

"As is so often the case with manufacturing, going green means saving green," Bedard adds. "We cut fuel usage, VOC, and carbon emissions, and we save 50 percent on the cost of these parts alone."

(continued from page 36)

"More original equipment manufacturers (OEMs) are adopting a 'make where you sell' strategy, for reasons beyond the traditional logistics goal of reducing landed cost and increasing demand responsiveness," says Garrett. "For example, the persistently strong yen relative to the U.S. dollar and euro forced many Japanese OEMs to shift more production to the United States and elsewhere as they seek to increase vehicle profitability."

He also cites various free trade agreements between specific countries that lower, or even eliminate, import tariffs — a powerful incentive for OEMs considering sourcing and production decisions.

Some in it for the Long Haul

While many automotive companies and large multinationals are taking advantage of shorter transportation distances, some limiting factors remain. One in five survey respondents representing companies with revenues of more than $10 billion do not see this inter-regional shift occurring, according to BDP's research.

"Nations, industries, and companies involved in global trade have invested trillions of dollars over the past 30 years in international and transcontinental supply chains on an east-west axis, primarily in the northern hemisphere," says Bornstein. "That's not going away soon."

Companies that capitalized on countries such as China early on are there for the long haul. They may be inclined to take a more deliberate and long-term strategic approach toward structural changes in their supply chains. That's less of an issue for smaller companies.

"The survey suggests small to midsize enterprises are more aggressively pursuing inter-regional supply chains because they have less invested in sourcing infrastructure, and are newer entrants to the world of international trade," Bornstein notes.

The change in inter-regional, hemispheric trade flows is playing out on a global scale. It's why North American companies are exploring Mexico and Latin America; EU companies are looking to Eastern Europe and Turkey; and Asian companies are trying to sell to growing consumer bases in Asia to hedge against sluggish export demand.

"Trade patterns are transforming to mirror the realities of low to no growth in the West, and the rise of the rest of the world," Bornstein explains.

Amid all this change is a major opportunity for U.S. industry to reinvent itself. It's no secret that over the past two decades the United States has become a destination, rather than an origin, for manufacturing.

"The emergence of plentiful and inexpensive natural gas in the United States could be a real game changer," Bornstein says. "We already have solid transportation infrastructure, a skilled labor force, and a low-risk environment with regards to security compared to other regions that are far less stable."

Bornstein also sees BDP's client base moving away from a transactional mindset toward a more strategic outlook that values visibility upstream and downstream in the supply chain, and solutions that empower companies to look at the breadth of their logistics activities, rather than just transportation moves.

Such an approach brings greater focus to total landed costs, and operational and regulatory challenges surfacing in countries that are taking a more protectionist approach toward economic and trade development. The ultimate tipping point for inter-regional trade, and reverse globalization, would be the United States reasserting itself as a manufacturing and export-driven economy. Some industries, notably chemical, are already moving in this direction and investing back into the United States.

"It's almost as if the United States could become a new emerging economy," Bornstein concludes.

The ultimate tipping point for inter-regional trade and reverse globalization: the United States reasserting itself as a manufacturing and export-driven economy.

Supply Chain Ethicists, Cover Your Ears

Sustainability and corporate social responsibility (CSR) is the lowest item on the procurement agenda when choosing new suppliers, according to a recent study conducted by Office Depot's United Kingdom and Ireland operating group.

The study, which questioned company representatives responsible for procuring goods and services, finds that only one percent of respondents rank CSR and sustainability most important. Twenty percent say it is least important of all—despite 80 percent agreeing that it will be slightly or significantly more important over the next two years.

"When choosing a supplier, a number of criteria have to be met and considered, but it is surprising to see how low sustainability ranked when it is expected to grow to significant importance within a few years," says Matt Smith, head of procurement at Office Depot.

"Cost reduction and greater efficiency in the supply chain are the biggest challenges that need to be overcome, and they are the key drivers for decision-making in the current climate," he adds.

Panama Canal's Trickle-Down Port Impact

Much attention has been paid to the Panama Canal-triggered container bonanza expected to hit South Florida ports such as Miami and Everglades and farther up the coast in Jacksonville. But the state's smaller ports are likely to benefit as well.

Port Manatee, located on Florida's Gulf Coast, benefits from direct shipping lanes to the Panama Canal, and has been gradually developing infrastructure over the past decade in hopes of growing its market share. The port has spent more than $250 million dredging its berths to 40 feet, extending docks, expanding container storage space, and improving rail connections.

Manatee will never compete with the likes of Miami, Everglades, and other Southeast container hubs, but officials see ample opportunity to feed off surplus demand and serve smaller vessels that will likely be pushed out as New Panamax ships come online.

"The big new ships will not be able to come into Port Manatee," says Larry Bustle, chairman of the Manatee County Port Authority, in a recent interview with the *Bradenton Herald*. "We're not planning to dredge to 50 feet of water so they can come here.

"But those ships will go to places where containers are put on smaller ships," he adds. "It will be an overall business increase, and an opportunity Port Manatee can share."

Elsewhere on Florida's panhandle, the Panama City Port Authority has similar designs. The port has created a niche by serving special commodities—such as copper, molasses, and wood pellets—and developing trade connections throughout Central America. Panama City has a "sister port" agreement with Port of Progreso, Mexico, to promote commercial activity between the two areas.

With the expectation of more containers coming through its port—albeit on smaller feeder ships—Panama City Port Authority has been working to expand its existing container handling space and equipment. It also recently broke ground on a new 150,000-square-foot, $6-million distribution warehouse, and is looking to create shovel-ready sites nearby as further enticement to manufacturers and other port users.

Port Manatee invested in infrastructure improvements to help accommodate containerships seeking alternatives to larger ports congested with increased Post-Panamax vessel traffic.

Full Disclosure

In what may be a referendum on cultural mores, government policy, and consumer expectations, U.S. companies are more transparent in disclosing environmental issues than their Asian peers, suggests a new report by London-based sustainability analyst firm Verdantix.

Sustainable Supply Chain Benchmark: Consumer Electronics reviewed 12 consumer electronics companies with aggregate revenues of $977 billion. The companies — Apple, Canon, Dell, Hitachi, HP, LG Electronics, Microsoft, Nokia, Panasonic, Samsung, Sony, and Toshiba — contrast greatly in how much data they disclose regarding their supply chain sustainability programs.

Companies such as Canon, Hitachi, and Samsung not only fail to disclose their environmental supply chain issues, but are not auditing and engaging their suppliers to the same extent as leading U.S. firms, according to the research.

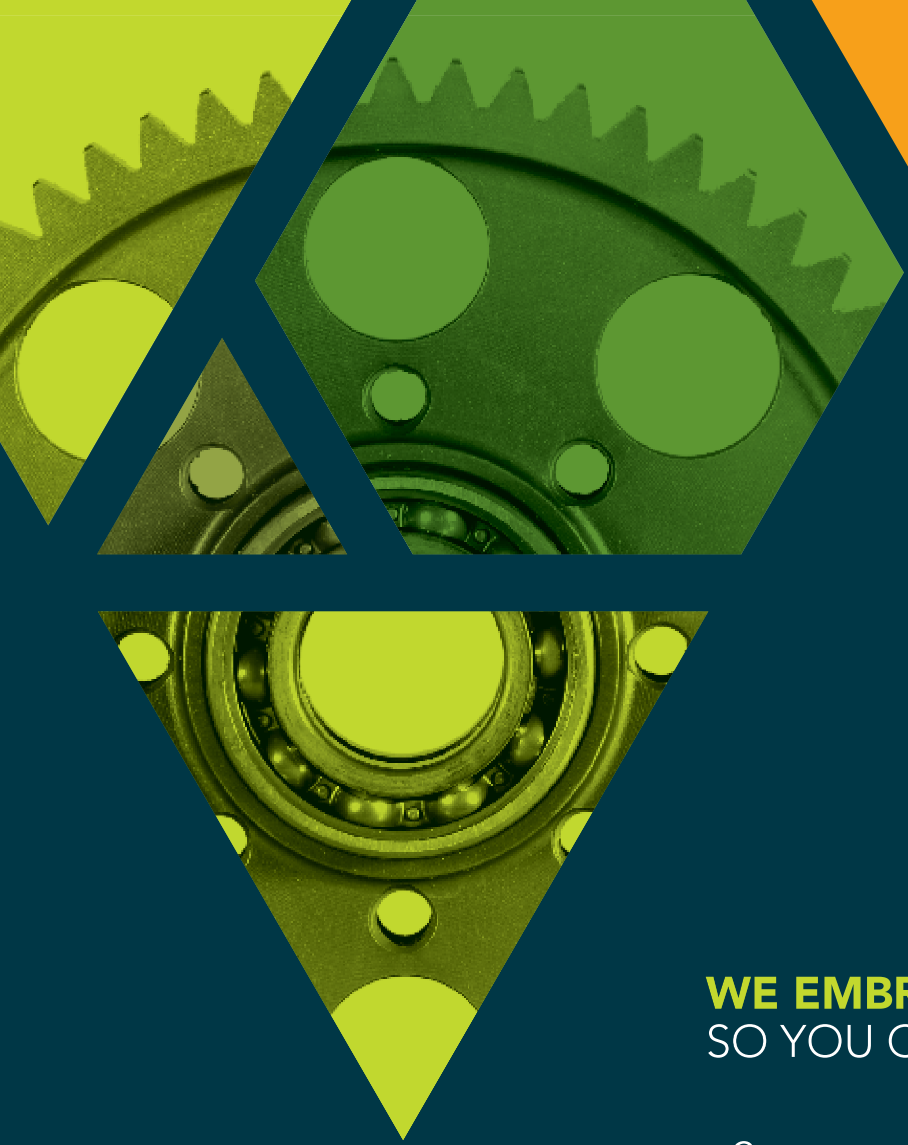
As examples of these disparities: all of the companies audit their suppliers' materials and substances; Apple, Canon, Panasonic, Sony and Toshiba do not audit suppliers' energy use; Canon, Microsoft, and Toshiba don't cover air pollution; Toshiba doesn't audit waste; and only Panasonic includes biodiversity when vetting suppliers.

"Investors, non-governmental organizations (NGOs), the media, and consumers increasingly hold global consumer electronics firms accountable for social and environmental issues in their supply chain," says Abbie Curtis, Verdantix analyst and author of the report. "Firms that aren't prioritizing disclosure need to step up, because reputational risk will only grow given the increasing demand for transparency."

Overstock Sales Go Under

As the retail industry becomes more sophisticated in matching supply to demand, and new online re-sale channels emerge, liquidation sales and bargain basement-type flea markets are slowly becoming anachronistic.

Warehouse sales that once drew long lines of bargain hunters looking for unsold merchandise are on the decline, says the *Minneapolis Star Tribune*. Local company Thymes, whose sale on soaps and scented products once was an area attraction, announced in 2012 that it was stopping the event because it didn't have enough excess inventory. Elsewhere in Minnesota, companies such as Manhattan Toy Co. and Illume Candles have also stopped sales, and greeting card company Stroke of the Heart and packaging firm Gage & Gage are considering it. ■



GLOBAL

THE WORLD AT A GLANCE

by Joseph O'Reilly

Tesco Tests Longer Reefer Trailers

As part of a government-backed trial program testing the efficacy of longer trailers, United Kingdom-based grocery chain Tesco has taken delivery of 25 new 51-foot Gray & Adams refrigerated units. The company will use the new trailers to deliver store inventory from regional distribution centers. Each trailer can carry 51 cages (UK shipping units), six more than a standard 45-foot trailer.

"That represents a 13-percent increase in productivity, so the potential benefits of fewer vehicle movements and lower emissions are obvious," says Cliff Smith, Tesco's fleet engineering manager. "But we've only just put these trailers on the road, so we still have work to do in terms of driver training and risk assessment at the delivery points before we come to any firm conclusions about the longer trailers."

The initiative is part of Tesco's F-Plan—fuller cages, fuller trucks, fewer miles, and fuel economy. Tesco has taken 111 million miles off the road over the past five years, saving 157,000 tons of CO_2 emissions in the process.

China Faces e-Commerce Crunch

While e-commerce growth is rapidly changing the U.S. distribution landscape, it is having a similar impact on China's industrial real estate market, according to Los Angeles-based global corporate real estate service company DTZ.

China is set to overtake the United States as the largest e-commerce market in the world by 2015, driven by rising domestic consumption, a fragmented retail market, and an expanding number of Internet users—which is expected to surpass 700 million people by that time.

A growing e-commerce consumer base will challenge Chinese companies to find more efficient ways to deliver product. Limited infrastructure, lack of warehouse space, and a shortage of last-mile delivery expertise make it difficult for

(continued on page 44)

(continued from page 43)
e-businesses to provide efficient services in lower-tier cities and inland areas, according to the report. The government's recent decision to allow FedEx and UPS license to offer parcel delivery service in select Chinese cities reflects this emerging need.

The scarcity of suitable land and infrastructure is also a concern. Modern logistics facilities account for just two percent of the total space in China. The majority of properties comprise middle- and low-end facilities, mostly converted from factories with inadequate height, insufficient loading docks, and restricted vehicle accessibility.

The lack of supply also contributes to higher rentals in the first-tier markets, with logistics rents rising by 85 percent in some districts of Shanghai during the past year. The higher rentals prompted many e-commerce companies to relocate their warehouses to lower-cost regions, the report says, which raises other issues such as rural transportation accessibility and efficiency.

Middle East Anticipates Transport and Logistics Boom

Despite a downturn in the global economy, the Middle East's transportation and logistics sector was expected to grow to $35 billion in 2012. This growth is largely driven by Gulf Cooperation Council countries substantially investing in infrastructure development and achieving significant economic growth in recent years. The United Arab Emirates (UAE) alone expects logistics revenue to approach $9 billion.

These growth predictions were part of the focus of senior Jebel Ali Free Zone (Jafza) officials attending the Annual Logistics Strategic Customer Forum, organized for key stakeholders involved in logistics and trade in the region.

While traditionally strong markets in the Americas, Europe, and Asia struggle, and freight flows among those regions dry up, emerging global locations present new trade opportunities for the Middle East, especially given its location and reputation as a cargo crossroads.

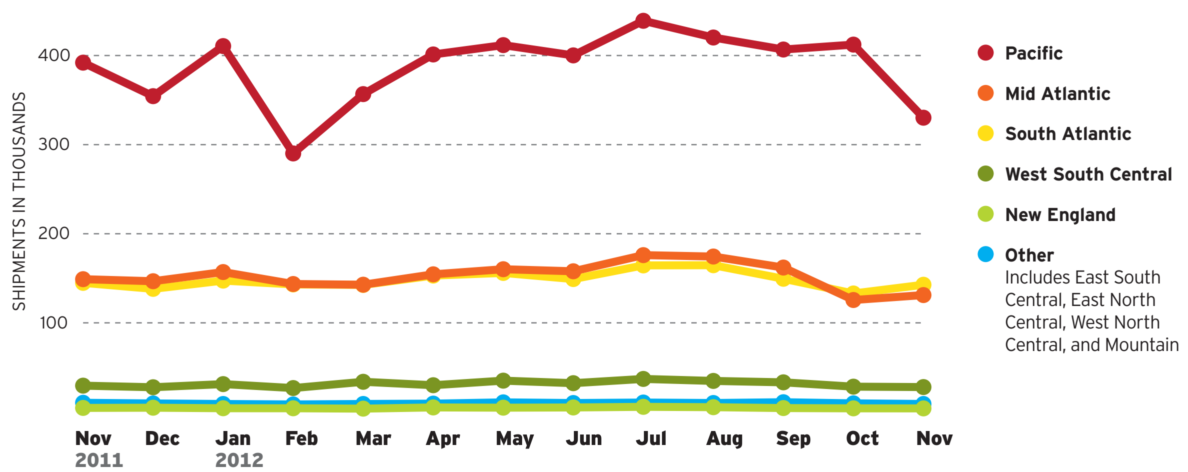
"The growth of the transport and logistics sector is closely connected to the economic cycle," says Ibrahim Mohamed Al Janahi, deputy CEO of Jafza. "When economic activity picks up, demand for transport and logistics services also picks up.

"That's why recession affects the transport and logistics sector immediately," he says. "A decline in air and sea cargo volumes in recession-affected regions reflects the state of the economy along those trade routes.

"The demand for transport and logistics services also explains the development of new trade corridors to support Intra-Asian trade and other regions such as Africa and Latin America—or in the case of the Middle East, opportunities between Jafza and other countries in the region," he adds.

U.S. Inbound Shipments, by U.S. Port Region

U.S. imports for November 2012 dropped significantly for West Coast ports due mostly to labor strikes. Other U.S. ports saw an increase in market share for that month, as shipments were diverted from Pacific ports.



Source: Zepol Corporation, www.zepol.com

Japan Looks to Pakistan

Japan is considering Pakistan's Gwadar port as a possible gateway to distribute cars to a growing Central Asian consumer market.

Japan's culture and economy faced an onslaught of challenges in the aftermath of its 1989 economic bubble burst—with the 2011 earthquake and tsunami, and continuing speculation about the country's aging population raising the most recent concerns. Industry has always been domestically driven, preferring the insularity of vertically integrated corporations—much like the country's real and perceived geo-political isolationism following World War II.

While Japan has shared relatively positive trade relations with the United States and neighboring Korea and China, its recent move to explore hidden investment opportunities in Pakistan spells a new wave of outward expansion to combat global competition and changing demographics.

A Japanese business delegation visited the politically volatile country to investigate industries—notably automotive—where it can inject investment. Pakistan is an emerging manufacturing location and ideal stepping stone to distribute vehicles into a growing Central Asian consumer market.

"Pakistan is blessed with wonderful ports, and Gwadar is the best due to its location," says Daisuke Hiratsuka, vice chairman of the Japan External Trade Organization, a non-profit trade and investment promotion agency working under the aegis of the Japanese government. "If the Pakistani

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government makes efforts to link its land routes to neighboring countries, then we may soon export our automobiles from Pakistan to other Central Asian states."

While Hiratsuka acknowledges the Pakistani government needs to address some of its investment policies for long-term planning, and the country's lack of technological infrastructure presents some obstacles, the potential to manufacture and source automobile parts and develop supply chain capabilities there is worth the risk. Pakistan's own development as a manufacturing and logistics location will only benefit from the presence of Japanese industry. And Hiratsuka is optimistic that other industries, such as retail and electronics, will eventually follow automotive.

"We need only one Japanese investor to enter the Pakistani market; the rest will follow for sure," he concludes.

Freight Forwarding Associations Merge

Nine global freight forwarding groups are coming together as founding members of the Elite Association of Logistic Networks. The new association will represent independent freight forwarders by engaging with and participating alongside major global industry associations, regulators, and government agencies.

The initiative was created, in part, as a response to fears within the global community that a growing number of rogue networks are sullying the reputation of bona-fide, high-quality logistics networks operating around the world.

"Almost daily, new networks are appearing that do not have the same ideals and standards that Elite member networks embrace," according to an Elite Association press release. "Many of these networks operate using dubious practices, provide poor quality services, offer unsubstantiated benefits, lack proper financial backing, fail to implement membership vetting procedures, and are generally unable to fulfill their stated obligations to their membership.

"This not only damages the reputation of logistic networks as a whole, but also creates such confusion among freight forwarders, shippers, and the logistics supply chain," says Elite.

The nine founding members of the Elite network are: Global Logistics Network, Global Project Logistics Network, Lognet Global, Project Cargo Network, Time Critical Logistics Alliance, Universal Freight Organization, WCA Family of Logistics Networks, WCA Projects Network, and Worldwide Partners Alliance.

Fujifilm Brings Latin America Growth Into Focus

As testament to South America's expanding consumer base, Fujifilm Corporation established a direct-sales subsidiary in Colombia, and a logistics base in Panama, to accelerate the expansion of its digital camera business. Both companies will commence business in 2013.

Fujifilm has been gradually building direct-sales infrastructure in countries such as Ukraine, South Korea, Indonesia, Vietnam, South Africa, and Turkey to reinforce its business base in those regions. Latin America is next to fall in line.

Colombia is enjoying steady economic growth of approximately five percent annually since 2010 due to social and economic stability that is stimulating private-sector investments. Fujifilm has been selling digital cameras through a local distributor, but will now switch to the direct-sales system.

The company is establishing its logistics base in Panama, a geographical center of the region with an edge in logistics costs and transport convenience. Fujifilm aims to shorten the delivery time to sales organizations in Latin American countries, reducing inventory and transportation costs.

Fujifilm aims to expand its digital camera business in the fast-growing Latin American market by launching a direct-sales subsidiary in Colombia.

Unions Build Power Across Supply Chain

One country might share another's labor pain if a new global alliance covering workers across the aeronautical supply chain gathers more support.

The Components to Carriers initiative—led by the London-based International Transport Workers' Federation (ITF), and its recently founded partner IndustriALL Global Union in Copenhagen—will provide unions with the opportunity to share best practices, foster solidarity action, and develop joint strategies to help build union power. It will also enable activists to map union strength in strategic locations, and collect intelligence on global corporations and supply chain shifts.

Representatives of the ITF's ground staff committee and civil aviation section, and IndustriALL's aerospace section, recognize the potential of connecting groups of workers across the aeronautical industry. They are leading the Components to Carriers program through a joint ITF/IndustriALL working group.

The alliance will involve unionists representing a range of specific areas—from aircraft manufacturing and logistics, to maintenance, repair, and overhaul operations.

"Connections between unions representing different types of workers are vital if we want to influence the global supply chain," says ITF coordinator Ingo Marowsky. "It's important that we understand the big picture and get ahead of the game."

Chinese Consumption Bears Fruit

Middle-class tastes are expanding China's intra-Asia trade connections. Growing exports of Thai fruit, for example, are creating new opportunities for logistics providers along overland routes between the two countries, helping to improve roads and develop much-needed cold chain infrastructure, according to a recent *Bangkok Post* article.

Reflecting China's expanding middle class, per-capita fruit consumption is estimated at 329 pounds per year, twice the global average. While the country is a top fruit grower, it relies on imports to meet demand. Import tariffs on fruits and vegetables have been eliminated under the China-ASEAN Free Trade Agreement. As a consequence, Thailand now accounts for nearly 50 percent of tropical fruit imports such as mangosteen, durian, longan, and bananas.

More telling, the increase in overland trade is helping to establish a more sophisticated transportation corridor. A memorandum of understanding signed last year between China and Thailand on the general administration of inspection and quarantine procedures has reduced transshipment times. Pre-inspected fruits transported from Thailand can pass through Laos and move directly to the border-crossing in Mohan, China, without being reloaded onto Lao trucks, which helps reduce handling costs.

While transportation costs are still relatively high, shippers can deliver door-to-door in two days versus longer, but cheaper, sea freight and inland water transport options that are less suitable for perishable cargo. A longer-term objective is to mesh inland water and overland transport networks so that shippers can gain greater economy without compromising product integrity. That will require further investment in cold chain warehouses, distribution centers, and specialized logistics services that reduce inventories, transit times, and logistics costs at intermodal exchanges and border-crossing points. To date, those resources are lacking.

The growth in perishables trade between China and Thailand also requires a level of transportation and logistics expertise that still remains nebulous in parts of Asia. Companies need qualified, integrated service providers that can facilitate customs clearance, handling, and transportation. These activities are currently fragmented among smaller local operators, reducing efficiency and increasing the risk of product spoilage.

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India Raises Rail Freight Rates

India's rail freight industry has long been perceived as both a problem and solution for the country's well-publicized transportation failings—especially in terms of linking transport hubs to emerging industrial centers. The government-controlled railway system, which has seen freight and passenger traffic, as well as revenue, increase during the past year, is now raising rates to subsidize more investment.

Indian Railways has not raised freight prices in 12 years, despite annual losses incurred by its passenger operations. The railroad's mandate to increase rates on certain commodities such as iron, steel, coal, coke, and cement by about four percent, and offset higher wages and fuel costs, has been criticized by some as an attack on the welfare state—and a move that is likely to spark inflationary fears. Others see it as a tactic by transportation officials to show potential investors they mean business.

Indian Railways signed multiple memorandums of understanding in 2012 to collaborate with industry on projects expected to drive economic growth. In December 2012, for example, the railroad partnered with a company to set up a forged wheel factory that not only

In a controversial move, India's government-controlled railway will raise rates to subsidize increased investment.


768
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Bonjour, Long Beach

The latest example of a foreign-owned entity aligning its fortunes with a piece of U.S. transportation real estate is France-based steamship line CMA CGM, which purchased a stake in the Port of Long Beach. The move is expected to boost port revenues by $70 million over the next five years.

It wasn't long ago that public outcry reached a fever pitch after United Arab Emirates-owned Dubai Ports World (DP World) acquired British-owned ports operator Peninsular and Oriental Steam Navigation Company (P&O), which had controlling stakes in six U.S. East Coast ports. DP World eventually divested that part of the business. The latest move by CMA CGM, the world's third-largest container shipping line, triggered little more than a ripple outside the port community. But it is emblematic of a wider trend within the global ocean freight industry as companies look to align their businesses with new ports.

Port operator China Merchants Holdings is buying a 23.5-percent stake in the Port of Djibouti, located at a critical trading nexus between Northeast Africa and the Arabian Peninsula. China Merchants also partnered with Chinese steamship line COSCO and Hong Kong-based China Shipping Terminal Development to buy a 30-percent stake in Taiwan's Kao Ming Terminal in Kaohsiung. Elsewhere, the Shanghai International Port Group (SIPG) acquired a 25-percent share in the A.P. Moller-Maersk-owned Zeebrugge Port Company, the largest coal gas transit port and liquefied gas import hub in Europe.

At Long Beach, CMA CGM will become a partner in the lease and operations of Pier J, a 256-acre terminal. The move guarantees that the company's ships will call exclusively at the Port of Long Beach when using the San Pedro Bay gateway.

Pier J is home to the Pacific Container Terminal. With a water depth of about 50 feet, and 17 post-Panamax gantry cranes, it is capable of servicing the new generation of large containerships.

CMA CGM purchased a stake in the Port of Long Beach, a move that will bring an additional 2.6 million container units to the port and increase port revenues by about $70 million over the next five years.

supports the railroad but also industrial growth in the country. Officials contend the agreement serves as further incentive to invest in railway infrastructure and to increase line capacity from mines, plants, and ports.

The government is still trying to fund and execute a plan that was laid out in 2006 to build a network of six dedicated freight corridors throughout the country to alleviate congestion and expedite rail freight movements. To date, the initiative has been beset by political and bureaucratic wrangling, scope creep, and cost overruns.

T&D: Canada's Lone Bright Spot

Despite weak economic growth and decreasing freight volumes across all modes, Canada's transportation and logistics industry revenue was expected to increase 30 percent through 2012, according to a Conference Board of Canada and the Business Development Bank of Canada assessment. This figure stands in stark contrast to other industries—retail, food service, and wholesale trade—largely suppressed by continuing global economic attrition.

A weak economic outlook and cautious consumers will leave many Canadian sectors with no significant growth in 2013, warns their *Canadian Industrial Profile* paper. Transportation and warehousing are the rare exceptions, with price increases and cost control practices driving strong profit growth going forward.

"Canada is not immune to the economic uncertainty that has weakened global demand for goods and services," says Michael Burt, director, industrial economic trends, the Conference Board of Canada. "Modest employment growth is limiting Canadians' income gains. Consumer confidence remains weak, and household debt continues to mount—all of which dampen shoppers' willingness to spend on retail items, food and drink, dining out, and travel." [ ]

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BY TOM STRICKER
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Five Signs Your Production Logistics Needs Help

Most manufacturers experience and address common inbound logistics challenges, but one area of improvement that many overlook is the discipline of production logistics—ensuring each machine and workstation is fed with the right product in the right quantity and quality at the right time.

As the crucial link that connects inbound materials to on-time delivery of outbound products, production logistics can increase an operation's efficiencies and save millions of dollars annually. By creating the right blend of technology, equipment, and disciplined processes, you will ensure materials get where they are needed to keep production flowing.

The million-dollar question is: when is it time to pay closer attention to production logistics? Here are five signs your production logistics may need improvement:

1. Myopic view of inventory. If line workers are struggling to find materials, your production logistics are definitely a problem. Another sign of trouble is repeatedly having too much or not enough inventory of an item. A third indicator is confusion about which supplier is delivering which item and when; this is often caused by too many hand-offs between suppliers before an item goes to production.

2. High inventory costs. Consistent high inventory costs often result from keeping more inventory on hand than is needed, which increases working capital and reduces inventory turns. High inventory costs may also result from unnecessary freight costs, especially if multiple suppliers feed the plant. The root problem for all these high costs might be traced to poor visibility or poorly conceived and executed production logistics processes.

3. Right time, wrong part. It's good when parts arrive at the production line when needed—but not if they are the wrong ones. This error can occur for several reasons. The supplier might ship the wrong part to the plant, but workers add it to inventory anyway. Someone may key the wrong data into a spreadsheet as part of a manual process for inventory tracking. Or a supplier's IT system may not be in sync with the plant's IT systems that connect materials sourcing and production.

4. Damaged goods. Production logistics problems might cause damaged parts and supplies—or worse, a damaged end product. Damaged items are often the result of too many hand-offs among suppliers, or too many workers handling parts and materials. It's simple math: the more touchpoints, the greater the potential for damage.

5. Line delays and stoppages. If the production line is delayed or stopped once, it's once too many. A pattern of delays illustrates the need to revisit production logistics, because the source of the problem might lie in poor inventory visibility, inventory errors, damaged parts or supplies, or any combination of these issues.

Do Something

The biggest mistake some companies make is doing nothing. Don't ignore the signs of major problems that could be tied directly to production logistics.

And if the signs aren't clear—yet problems persist—consider having a production logistics expert evaluate the inbound materials flow from the time they arrive on site until they reach production. You might be surprised by the solutions available, and the results they can deliver. ■

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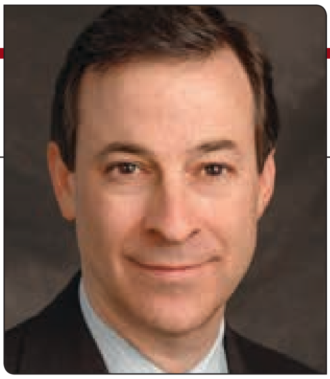

VIEWPOINT

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Surveying the Home Delivery Landscape

Shortly after Claude Ryan and Jim Casey began delivering telegram messages in 1907, they seized on the idea to solve a business problem between department stores and the growing urban population in Seattle: managing home delivery of store-bought products.

These new urbanites mostly walked or used streetcars, with only a few owning early automobiles. Safely transporting home items purchased from stores posed a challenge — one that helped catapult Ryan's and Casey's upstart business into what is now expedited carrier UPS.

More than one century later, consumers still love having goods delivered to their homes. Seventy-five percent of respondents to a recent AlixPartners survey made at least one online purchase in the past year, and two-thirds of survey respondents have one or more "shipping memberships" to speed, simplify, and/or reduce the cost of home delivery.

Research predicts the following trends affecting home delivery's future:

■ A leap forward in ease of online transactions — due to the proliferation of mobile commerce, shipping programs and clubs, and online retailing — will drive even more home delivery.

■ To prevent product returns from being a barrier to online purchasing, e-tailers will need to streamline their returns processes, and brick-and-mortar retailers must accept in-store returns and exchanges for online purchases. Today, 49 percent of shoppers cite return difficulties as their top reason for not purchasing online.

■ Consumers will want more home delivery options, ranging from no-frills discounted delivery to premium-priced shipping with value-added services such as user-specified delivery windows, weekend or off-hour delivery alternatives, advance delivery notifications, tracking and re-directing alternatives, and multi-package consolidation.

■ Free shipping will continue to capture consumers' attention. The challenge for shippers and retailers alike will be determining how to offer this benefit without going broke in the process.

■ The possibility of online sales taxes could hurt e-commerce. Twenty percent of surveyed shoppers suggest such taxes would greatly reduce their online purchases, though 41 percent indicate it would not impact their buying habits.

■ Fuel surcharges are being used more often to recoup costs — sometimes with only a rough correlation to the actual period costs of the fuel.

■ Many brick-and-mortar retailers are caught in the conundrum of needing more consumer foot traffic, while at the same time being loath to lose sales to an online competitor. This forces them to balance home delivery offerings with the in-store experience.

The Big Picture

Consumers show a low tolerance for bureaucracy, particularly when it comes to returns, and retailers who think only small packages are suitable for home delivery are missing a major and growing segment of the market.

The same goes for not taking full advantage of loyalty programs, which have become a major purchasing driver in recent years — and are affecting shipping programs.

Meanwhile, delivery providers need to continue to differentiate themselves by anticipating and meeting consumer expectations — be it delivery-window flexibility, various value-added services, returns management, insurance, or time-definite services.

While consumer appetites for shipping have not diminished, what they are willing to ship and how much they are willing to pay for it is changing. Retailers and shippers alike need to find ways to meet this changing demand, while maintaining adequate margins and finding new avenues for continued growth. ■

IT MATTERS

BY ERIC BREEN
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Yard and Dock Management Tools: An Extra Set of Eyes in Your Facility

Facility managers and warehouse executives face unique challenges as global supply chain complexity grows. While many issues and costs associated with moving materials and products are out of their control, optimizing yard, dock, and warehouse processes can increase operational and logistics efficiency.

Designed to eliminate common and costly logistics problems, yard and dock management systems use real-time and physical data to help facilities efficiently manage operations such as loading dock visibility, live and staged trailer coordination, and turn times.

These systems integrate loading dock equipment with intelligent software to monitor, communicate, and manage loading dock status, helping companies avoid costs related to detention charges, product spoilage, and employee accidents.

These systems do more than simply monitor trailer movements—they act as an extra set of eyes to track facility operations. Here are some tips for implementing yard and dock management systems to maximize their benefits:

■ **Start beyond the dock.** Tracking costly problems before they start is the foundation of yard and dock management systems, so why not begin outside in the yard before problems make their way to the dock and warehouse?

Many systems use RFID and sensor technologies, as well as GPS tracking, to record every trailer movement. This increased visibility and monitoring creates real-time performance reports, with the ability to reduce yard check time by 90 percent, and yard labor and equipment resources by up to 30 percent.

■ **Use tools to control the variables you can.** Yard and dock management systems provide a single interface that captures dock status, while many types of paging devices can be provided to drivers to make trailer movements timely and efficient. This increase in dock efficiency can improve positive dock utilization by up to 20 percent.

■ **Run at full potential.** Receiving real-time loading dock status updates from a single interface can reduce labor hours while increasing dock utilization by 20 percent or more. And in response to the increased productivity, some systems can even eliminate unnecessary service through scheduled maintenance based on actual equipment usage. These updates can also help reduce energy costs through sensors that guarantee dock doors are closed when not in use.

■ **Track, measure, change, repeat.** Proactive change on the loading dock and in your logistics operations can help reduce excess costs associated with moving products and materials. But how do you know what to change and when?

Yard and dock management systems do more than simply track and provide raw data. Many of these tools develop detailed reports based on parameters such as carrier arrival and departure times, loading and unloading times, and labor hours. These reports provide the information you need to make important decisions that can affect the productivity and profitability of your entire operation.

On the Right Track

Integrating yard and dock management systems can help take your operation to the next level by optimizing your yard, loading dock, and warehouse logistics, and integrating them with software to manage tasks and trailer movements. From the moment a trailer enters your yard to the time it leaves, you'll know exactly where it is, what's on it, where it needs to be, and how to get it there as quickly as possible. That's the definition of efficiency. ■


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SMART MOVES

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Training Tomorrow's Logistics and Transportation Executives Today

A volcanic cloud descends on Europe, disrupting flight plans. A tsunami in Thailand ripples across the Pacific and affects port activity in California. Forest fires in Los Angeles close highways for days. Threats of a terrorist attack in Brussels halt all transportation.

Today's logistics and transportation executives must be prepared to handle these scenarios. Their jobs have become as much about dealing with crisis and understanding technology as loading boxes on trucks and airplanes to move product from Point A to Point B. Senior-level executives' roles have become extremely complex, requiring skills that could not have been anticipated 20 years ago.

The following are some demands C-level executives must be able to address:

- Intermodal transportation that features complex sequences involving trucks, ships, trains, and airplanes. Transitions must be seamless, quick, and cost-efficient.
- International currencies, border treaties, terrorist/piracy hot spots, taxes, regulatory laws, and government issues.
- Security measures that keep product safe as it moves through dangerous areas. Logistics executives must consider how to avoid such areas when possible, and how to protect pilots, truck drivers, and cargo when entering volatile environments is unavoidable.
- Transportation costs and impacts.
- Negotiating with transporters in other countries, understanding pay scales, and ensuring timely deliveries.
- Local cultures, religions, and work ethics that come into play when dealing with staff and service providers around the world.

Building Better Leaders

Because of the premium placed on delivery speed and safety—not only in local markets but across borders into other countries—today's executives must be able to translate efficiencies and systems into profits. Products get to the customer faster, and prices can be managed better when processes result in lower transportation costs and fewer labor hours.

As a result of these new demands, more supply chain education providers are introducing programs to prepare students to be the logistics and transportation executives of the future.

A syllabus for the supply chain management major at Lehigh University, for example, clearly illustrates the complexities of this field. The program:

- Provides solid exposure to supply management, logistics, business-to-business marketing, and operations management topics.
- Develops cross-functional team skills by mingling supply chain management students with engineering students in the Integrated Product Development program.
- Emphasizes advanced cost analysis, negotiation, product development, and e-business.
- Integrates core business courses with supply chain major courses.
- Provides field study and experiential learning opportunities.

Logistics and transportation is a growing field—one with no plateau in sight. Companies are always seeking faster and better ways to get product to market, to retailers' shelves, or to consumers' homes. It is a sector that requires ingenuity for today and vision for the future. ■

ECODEV

BY TIM NOWAK
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St. Louis: New Gateway to Asian Markets

Nicknamed the Gateway to the West nearly 200 years ago for its presence as an economic powerhouse, St. Louis, Mo., is making significant progress as a key partner for international trade relations and economic growth. For new businesses or those seeking to grow trade relationships, St. Louis now represents a gateway to Asian markets.

St. Louis — and Missouri as a whole — is a dominant international trade presence in China and advanced economies. China is now the largest market for exports from the St. Louis region. In 2011, exports climbed nine percent, to $12.3 billion.

The World Trade Center St. Louis, a division of the St. Louis County Economic Council, supports the region by guiding businesses to expand into foreign markets, hosting visiting trade delegations, and promoting the region as a place for international trade relations and economic growth.

A company's success overseas depends on its staff's expertise and understanding of the unique requirements of selling and sourcing in international markets. Local workforces and professionals need the tools to excel in international business markets. To provide training and resources to Missouri-based companies wanting to do business in Asian markets, the World Trade Center St. Louis launched an Asia Trade Desk.

The intention of this resource is to develop deeper economic, cultural, and educational connections between St. Louis and Asia. In addition, the Asia Trade Desk partnered with the University of Missouri-St. Louis to launch a new online Chancellor's Certificate in International Trade in March 2013. The Chancellor's Certificate is a six-month training program, providing participants with the opportunity to learn the practical aspects of international business from experienced industry professionals.

In 2012, the World Trade Center St. Louis partnered with former U.S. Senator Christopher "Kit" Bond to help develop relationships in Asia. In January 2012, Senator Bond led a trip to Indonesia with 23 participants from eight companies and four universities in the St. Louis region, including representatives from Emerson, Boeing, Monsanto, Peabody, University of Missouri-Columbia, University of Missouri-St. Louis, Washington University in St. Louis, and Webster University. These visits are an essential strategy in demonstrating the region's commitment to becoming a global city.

A Bright Future for Emerging Markets

Growth in overall world trade volume was expected to slump to 3.2 percent in 2012 from 5.8 percent in 2011 and 12.6 percent in 2010, according to International Monetary Fund forecasts. The past decade was the first time emerging markets and developing economies spent more time in expansion—and experienced smaller downturns—than advanced economies. Indonesia, Malaysia, the Philippines, Thailand, and Vietnam have the highest projections for growth in 2013.

Despite the slowdown in Asia, St. Louis leaders see demand for U.S. products from the middle class in emerging markets, and are aggressively pursuing opportunities in these economies. ■

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BY EMILY P. DAVIS
Sustainability Program Manager, Exel/DHL Supply Chain Americas
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Wasting Away to Meet Sustainability Goals

An average distribution center generates or handles anywhere from 100 to 1,000 tons of solid waste each year—or approximately 30 pounds per square foot—that could be reduced, reused, or recycled.

Typical distribution center waste streams include corrugated cardboard, office and breakroom waste, plastic strapping, pallets, paper, batteries, yard waste, accumulated scrap such as defective or returned products, and unique materials such as electronic waste and polystyrene that are not commonly handled by haulers.

Because distribution centers are lower volume waste generators compared to some manufacturing, retail, and construction sites, waste management is not often seen as a priority. Some logistics providers and shippers, however, have implemented programs that dramatically minimize or eliminate waste—creating savings and customer satisfaction in the process.

Following are five key actions that help waste management and other sustainability programs succeed:

1. Initiate programs from the top down; grow them from the bottom up. The initial spark must come from the top; the site manager's support is required to launch and lend credibility to the program. Yet it is the floor associates—who understand what goes into the waste stream and must own the process of managing it—who will drive the program. Having a site green team, or even partially dedicating one or more associates to the program, will ensure it has the support needed to succeed.

Process improvement workshops are a good tool for engaging associates. Green teams can assess waste generation and identify the best solutions for reusing finished goods waste by turning it into a saleable product; composting; and converting waste to energy to achieve zero waste.

2. Get a handle on your waste picture. You can't improve what you don't measure, so it's imperative to collect data on the types, amounts, and costs of waste the site generates. A waste audit is a good place to start, but can be a stumbling block because it takes time and effort to work with vendors to understand how much and what kind of waste they are hauling away. Software tools, such as the EPA's *WasteWise*, can help collect data and track performance as you work to reduce waste.

3. Create reduction goals with achievable targets and monitor progress. Once you know how much waste your facility generates, set realistic goals and track progress to keep everyone motivated. Challenging but achievable goals include eliminating all waste going to landfills, and increasing recycled materials by a specific percentage. Either way, tracking progress is essential to realizing your goal, so be sure to assign staff resources to monitoring.

4. Motivate employees through education, and make them part of the solution. Associates are more likely to get involved once they realize they can make a difference, so education is the first step to changing behavior and creating a culture of sustainability. The EPA is a great resource for free videos and other information to create awareness of the problem and the value of reducing, reusing, and recycling.

Green teams should meet regularly and build events around sustainability initiatives to help associates take pride in their efforts to operate sustainably.

5. Celebrate success. Bring attention to the program and keep associates interested and involved by recognizing and celebrating their efforts and results. ■


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Supply Chain Management:

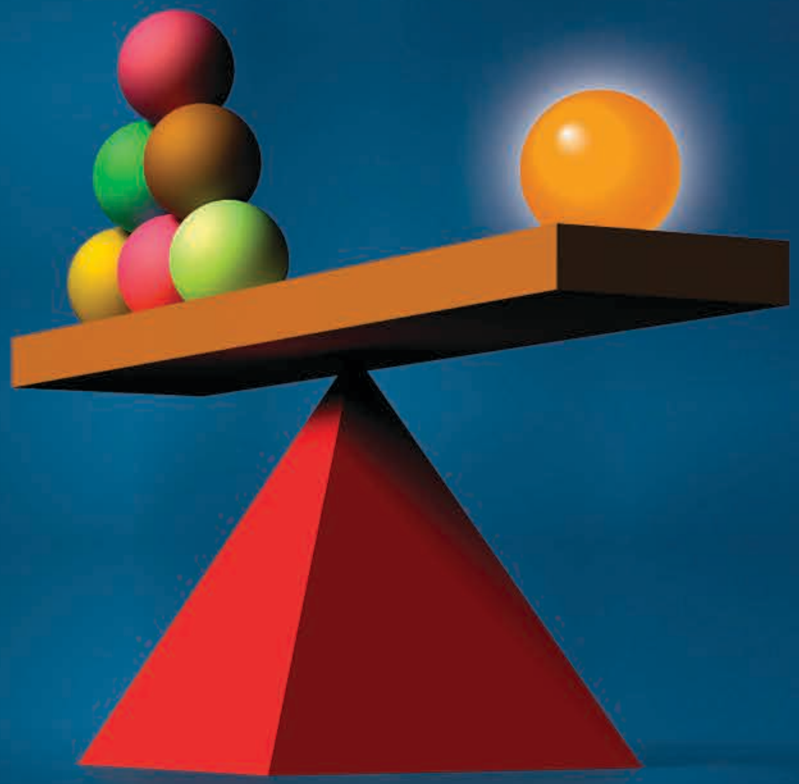
THE GREAT EQUA

In the supply chain, all things are never equal. Success and failure hinge on your capacity to adapt and respond to change. It's a matter of creating innovative products, developing a means to deliver them to market, and jockeying for competitive position–in effect, matching supply to demand in the most efficient and economical way possible.

Mastering these variables, and striking the right balance, can be the ultimate competitive differentiator. But it's difficult.

Why? Because variability is a constant. Visibility is obscured. Regardless of how good your product is, you are continually challenged with flexing capacity, labor, and inventory at different touchpoints along the value chain to mitigate myriad forces that threaten to tip the balance one way or the other.

When supply chain management is your enterprise's business philosophy, you get visibility, collaboration, velocity, and demand responsiveness. You not only flatten variances, you multiply your supply chain force.



LIZER

The following six case studies demonstrate how companies large and small, domestic and global, practitioners and pioneers, are leveraging transportation and logistics best practices to act as great equalizers and force multipliers.

Whether it's trending toward demand-driven logistics principles, partnering with 3PLs to align and streamline transportation and distribution processes, tapping new technologies, investing in materials handling solutions, empowering your workforce, or optimizing DC site locations, mixing and matching tactics and strategy will improve performance and squeeze out costs.

All things being never equal, supply chain management can be a force multiplier. But in a world defined and dictated by change, it is always the greatest equalizer. Using demand-driven logistics practices to create a responsive supply chain is the best competitive weapon your company can have.

Turn the page to find out why.

DEMAND-DRIVEN LOGISTICS:

Remote Control

Adopting demand-driven logistics can increase visibility, drive supply chain efficiency, and offset any market advantage your competitors might have.

by Joseph O'Reilly

Shippers in today's economic climate face myriad challenges over which they have little or no control: consumer behavior, fluctuating fuel costs, supply chain disruptions, and capacity and labor availability. Many of these variables are, at best, difficult to predict. Consequently, they force supply chains to function reactively.

But companies don't have to follow the herd. As much as market volatility breeds complacency and risk-averse decision-making, it also raises the stakes for shippers to seize control of their supply chains where there are opportunities to do so — to identify, anticipate, manipulate, and manage change, and leverage this demand responsiveness as a competitive differentiator.

Adapting demand-driven logistics principles empowers shippers to drive collaboration across different functional areas; engage customers, suppliers, and third-party intermediaries more closely; and broadly drive out costs and inefficiencies within their supply chains.

By controlling decision-making and dictating actions downstream from origin, companies grow more responsive to demand and nimble to change. It allows them the structure to optimize what is known, and the flexibility to adapt to countless unknowns. Visibility is a key enabler in this paradigm shift. Yet it also remains a sticking point.

"Usually the first pain point shippers face is visibility to control their inventory and react to different situations," says Janet Guinn, manager, TMS Engineering, in IBM's Sterling Commerce division. "The secondary consideration is cost."

When companies don't have visibility to inbound flows, or can't align supply to demand signals, costs can quickly spiral out of control.

By collaborating with suppliers, shippers can arrange to receive smaller quantities more frequently, as needed, to minimize inventory.

Transportation management systems (TMS) and supply chain visibility tools provide shippers with a common platform to share information and manage transportation and logistics processes throughout the network. Having data in one repository that feeds upstream planning and analysis helps facilitate demand-driven logistics. While companies are using technology to move in this direction, control remains elusive for many businesses.

"Demand-driven logistics has not yet been widely adopted," says Jaris Briski, senior vice president of business development and parcel at GENCO, a Pittsburgh-based third-party logistics (3PL) provider. "Shippers may manage only certain subsets of inbound materials procurement."

Without a true demand-driven vibe coursing through the supply chain, shippers are likely to adapt parts, rather than optimize the whole. Companies struggle when siloed functions aren't in sync — a lack of alignment creates slack in the form of additional inventory, time, and cost.

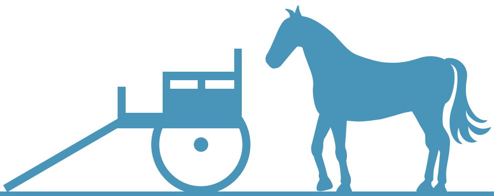
Most companies successfully manage outbound transportation and distribution processes, largely because they directly impact the end customer. When something goes awry, there is an immediate and obvious consequence. With a demand-driven logistics approach, impacts are more subtle, and build gradually over the entire order cycle. That's why it requires a holistic perspective, and often a paradigm shift within the organization — one that likely doesn't occur without executive mandate or a push from 3PLs.

The Power of Pull

"Sometimes the ability to successfully run a demand-driven operation depends on whether a strong enough stake exists within the enterprise to control the inbound supply line," says Briski. "If the top of the organization isn't interested in inbound logistics or procurement, it becomes a moot point. Once you get past that obstacle, it comes down to having the technology to evaluate how best to create visibility and control."

Transportation is an obvious flash point for companies that struggle with supply chain visibility, simply because transport costs have a tendency to creep. By contrast, when shippers are able to accurately forecast demand farther out, they have more flexibility to mix and match transportation options to meet their need.

For shippers and consignees sourcing globally, failing to communicate with upstream partners can create any number of inefficiencies and costs. That's why companies are driven to reach deeper into the supply chain and work more closely with



THE PROBLEM WITH A LOT OF SUPPLY CHAIN SOLUTIONS IS THAT THEY DON'T FIRST DEFINE THE PROBLEM.

Today, global logistics providers must have the tools to manage customer supply chains. A global office network, transportation and distribution services, integrative IT platforms, and so on. With these tools in place, one might think that is enough. It isn't. However, they all have to be in the "cart."

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suppliers and manufacturers to fine-tune production systems and make sure they are in lockstep with downstream processes.

Collaborative Efforts

Briski compares this disposition to how suppliers might interact with customers. "Suppliers should be aware of, and intimately clued into, customer needs," he says. "Then they can take a mirror-image approach upstream with their suppliers to achieve the most effective and confident supply chain."

When consignees and suppliers achieve this level of collaboration, they are better positioned to decide who should manage transportation and control cost. This is where a 3PL's objectivity and expertise can help push value even further.

> "Sometimes the ability to successfully run a demand-driven operation depends on whether a strong enough stake exists within the enterprise to control the inbound supply line."
>
> —**Jaris Briski,** senior vice president of business development and parcel, GENCO

For example, if a company is purchasing a high volume of product from a supplier, and that supplier is fulfilling 10 purchase orders, it may not know how to sequence those shipments. GENCO has had success bridging that gap by taking the real-time signal from the customer, and coordinating transportation so that orders are properly sequenced in order of priority.

In a similar fashion, Waltham, Mass.-based 3PL ModusLink Global Solutions has helped engineer demand-driven solutions for high-tech shippers that allow them to better manage short lifecycles in a competitive environment.

Offshore manufacturing is a normal course of business for many high-tech companies. As supplier networks become more complex, shippers are challenged with managing inventory levels.

Traditionally, high-tech shippers might wait for product to fill a container before shipping it, which often triggers a swell of inventory in the system. As they seek to reduce total costs, that model is changing.

Looking at the Little Picture

"There has been growth in consolidation hubs in China and Hong Kong, located at ports closer to the point of origin," says Eoghan Dillon, supply chain solutions manager at ModusLink. "Companies are taking smaller quantities from each of their suppliers, consolidating them into containers, then shipping."

In effect, shippers are following a "little-and-often" approach that is predicated on point-of-origin collaboration and consolidation to move smaller quantities more frequently, as needed. Such an approach eliminates large minimum order quantity constraints, and reduces total inventory within the system.

It's a more sophisticated play that challenges the way companies manage their supply chains. It tears down operational walls, because ordering smaller quantities from suppliers often requires process changes and/or incurs higher costs. Shippers have to be able to see the bigger picture to recognize the total impact.

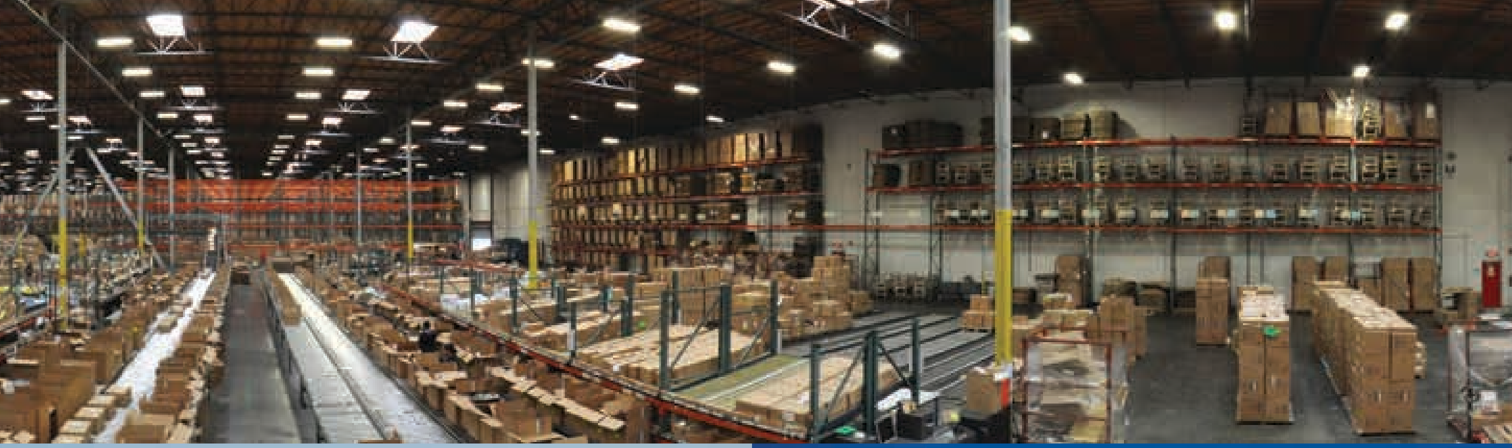
"Purchasing managers want large volumes of product at the lowest cost," says Dillon. "But that increases supply chain inventory. Demand-driven logistics, in contrast, aims to reduce inventory."

Shipping smaller order quantities directly impacts transportation. "Instead of shipping full containers of one particular product or from one particular supplier, companies need to consider sharing containers and consolidating mixed loads," Dillon explains.

Predictive Flexibility

That's why collaboration is the essence of demand-driven logistics. Success requires different operational functions to work together. With greater visibility downstream and upstream, organizations can align and orchestrate their supply chains around this common goal.

Even on a smaller scale and at the local level, demand-driven logistics pays dividends. When



Dublin, Ga.-based SP Fiber Technologies, a producer of high-quality newsprint and paperboard, partnered with RVCii two years ago, it was looking for a 3PL that could build, then execute a new purchase order (PO) management system.

The processor operates two mills — located in Dublin and Newberg, Ore. — that produce more than one million tons of product annually, half of which is recycled. Because it's a commodity-driven business, managing transportation costs is critical to the bottom line.

RVCii — a Columbus, Ohio-based independent third-party brokerage agent of TTS, a 3PL in Dallas — engineered a proprietary PO management system called SCM Logic. It provides SP Fiber with a Web-based platform for all its suppliers, recyclers, and contracted carriers. Partners can sign into the portal, view their individual purchase order plan numbers, and schedule releases within the system. SCM Logic then tenders orders automatically via EDI to carriers specified in the routing guide.

The system also includes functionality to send alerts and notices to the 100-plus partners in the network if exceptions arise or demand changes.

SCM Logic is a PO system in the truest sense, says Steve Davis, director of operations, RVCii. It helps regulate the flow of raw materials coming into the mill. But in addition to these core capabilities, SP Fiber uses the system as a de facto TMS to dispatch loads, track and trace orders, and provide visibility to all partners in the network.

The PO system provides RVCii with the necessary visibility to marry inbound and outbound loads, which helps dispatch capacity in certain remote areas. For example, SCM Logic works with a small recycler in Arkansas that sends one or two loads per week inbound. In order to serve that location, RVCii must find a truck willing to go there. SCM Logic provides RVCii with the visibility to coordinate continuous moves. When that truck brings scrap back, the 3PL can marry it with a reload for that market, so it continually captures and maintains capacity.

RVCii constantly updates the system with new information, such as carrier rates, and sends SP Fiber regular reports about inbound supply forecasts. Based on the cost of commodities being moved, shippers may react differently depending on whether prices are trending up or down. If a supplier is sending seven boxcars of freight at a

Companies can save money on inbound transport costs by segmenting parts, differentiating by mode and need, then marrying components together at a fulfillment location closer to demand.

given time, and SP Fiber knows it can't accommodate that much volume at its mill, it can stagger or delay those moves.

"The system allows SP Fiber visibility to see what its shippers are doing," says Davis.

SCM Logic demonstrates how technology can act as a force equalizer by aggregating shipment information and providing a common platform that feeds decision-making throughout SP Fiber's supply chain. It's not as sophisticated as some of the systems other industries use, but it serves a distinct purpose — enabling the paper mill and RVCii to control inbound material flows and transportation costs.

As pressure mounts to optimize supply chain functions amid countless market uncertainties, inbound logistics presents a path toward continuous improvement.

Beyond Transportation

While transportation often presents the lowest-hanging fruit in terms of potential gains from an inbound logistics directive, impacts are felt in countless ways throughout the supply chain. At its root, demand-driven logistics facilitates collaboration within companies and across the extended value chain — and this has a direct impact on inventory control.

"Purchasing agents, materials requirement and store inventory planners, and transportation managers can all work together with visibility tools to react to demand and best position product," says Guinn. "In the past, information had to go through set supply chain tunnels that no one had visibility to. Consequently, inventory increased and supply chains became longer. Now the functions are reacting to demand in real time together."

Distribution and warehousing is another important beneficiary. E-commerce is changing the retail paradigm, and demand responsiveness is a critical success factor as companies look to capture market share. A number of consumer electronics companies are reconsidering the traditional model with inbound control in mind.

"If electronics companies have visibility and understand demand, they may be able to pull out of the local DC and deliver direct-to-consumer from Asia, cutting out a distribution piece," Dillon says.

Demand-driven logistics also pays some green — both in terms of sustainability and cost savings — especially for high-value shippers that are exclusively using air freight to move product.

"Ninety percent of the value of a mobile phone shipment, for example, represents 20 to 30 percent of the package's weight," says Dillon. "Shipping finished product by air from China to the United States wastes shipping costs. All the other components in the box are low value and don't need to be shipped via air."

Companies can segment the parts, differentiate by mode and need, then marry components together at a fulfillment location closer to demand. This approach maintains responsiveness at a lower cost, while also reducing carbon footprint.

The justifications for engineering demand-driven supply chains are manifold. Companies often control different pieces independently, or without seeing the bigger picture. The recognition that inbound flows at different supply chain touchpoints influence processes downstream — and that any change in demand can tip the equilibrium — is critical to leveraging this strategy as a change agent.

As pressure mounts to optimize supply chain functions amid countless market uncertainties, inbound logistics presents a path toward continuous improvement. It provides consignees with the directive to measure performance, identify problem areas, and execute solutions holistically, understanding how individual functional parts complement the entire supply chain.

"By taking this approach to a granular level, identifying why a shipment doesn't arrive when it should, companies begin to understand cycle times at every interval in the inbound supply chain — from supplier notification to shipment release, carrier notification, and pick up. They can then find ways to reduce waste," explains Briski.

That is the power of control. ■

[CASE STUDY] DUNKIN' ON DEMAND

The brand famous for its coffee and doughnuts runs alone when it comes to demand-driven enterprise. In January 2012, the company made a noteworthy change in the way it manages its supply chain when it agreed to partner with a franchise-owned distribution and purchasing cooperative —the National Distribution Commitment Partnership (DCP) – that merged four existing groups.

The distribution operation serves more than 7,000 Dunkin' Donuts and Baskin Robbins restaurant locations, managing the delivery of products from hundreds of suppliers to seven DCs across the country. While the Canton, Mass.-based company still retains decision-making control over most aspects of its business, the move to partner with the National DCP will help streamline its distribution operation.

"The franchisee-owned cooperative handles the procurement and distribution," explains Scott Murphy, vice president of global supply chain at Dunkin' Donuts. "As the brand owner, we control specs, and approve products and suppliers. We've essentially outsourced the procurement and distribution function."

Murphy is quick to downplay the control individual franchises actually wield in this new five-year agreement between Dunkin' Brands and the cooperative. The chain will still dictate "big picture" decision-making, while allowing the National DCP greater latitude in negotiating prices with suppliers, for example. Still, unlike before, franchises now have a collective voice at the table – which is unique in the fast food restaurant industry.

Dunkin' Donuts gave franchises a hole lot to be happy about when it agreed to give them control over inbound shipments.

The move is already paying dividends. Consolidating four separate purchasing cooperatives into a single organization has allowed Dunkin' Brands to eliminate redundancies and, in turn, reduce costs. It has also approved multiple suppliers for most product categories to provide the cooperative with greater leverage in negotiating prices. The National DCP will also feature more prominently in discussions about new product development.

"The main benefit of the new arrangement is that franchisees have secured their position in our supply chain long-term," says Murphy. "The relationship is performance-based, ensuring franchisees get top service, cost, and quality. In addition, uniform product costs are being phased in over a three-year period, which began in 2012."

The National DCP has been busy re-configuring its own distribution network. In June 2012, it partnered with Dallas-based third-party logistics (3PL) provider Transplace to manage inbound shipments to its DCs throughout the United States. The 3PL's transportation management system will provide inbound shipment lifecycle visibility, reduce direct transportation costs, and improve overall operational efficiencies for the cooperative.

The agreement between Dunkin' Brands and National DCP also supports the restaurant chain's roadmap as it looks to double the number of Dunkin' Donuts locations to 14,000 over the next 20 years – especially in the western United States. Providing franchisees in new markets with the same product cost structure as established franchisees in the eastern United States will help ensure that more of America runs on Dunkin' moving forward.

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Frequent logistics network optimization, aggressive attempts at collaboration, and partnering with trusted 3PLs act as force equalizers to garner greater supply chain efficiencies.

by Joseph O'Reilly

One word captures today's transportation and logistics sector: uncertainty. Shippers and service providers are engaged in a recurring tug-of-war as changing demand patterns challenge broader supply chain paradigms. The backdrop: a slowly recovering U.S. economy teetering on the precipice of a fiscal cliff.

In the North American market, these changing demand patterns assume various forms: the rapid growth of e-commerce; intermodalism; migrating consumer demographics; capacity and labor constraints; industry regulation; fuel cost fluctuations; and labor unrest. All these factors are in play as U.S. manufacturers and retailers plan their roadmap for the future.

"Five years ago, before fuel indexes began rising every 15 days, companies were in good shape if they optimized their networks every five years," said Gene Long, director of New York City-based Deloitte Consulting, at the Supply Chain Council's Supply Chain World Conference in April 2012. "Today, the half-life on a North American network design, given fuel price volatility and labor costs, is about three years.

"Companies have to look at their networks scientifically, and more frequently, or costs will spiral out of control," he added.

Network optimization is one way shippers address market variables. Companies also tap third-party partnerships, and seek more collaborative business process improvements to help steer their businesses into a new growth curve. While cost remains a common denominator in

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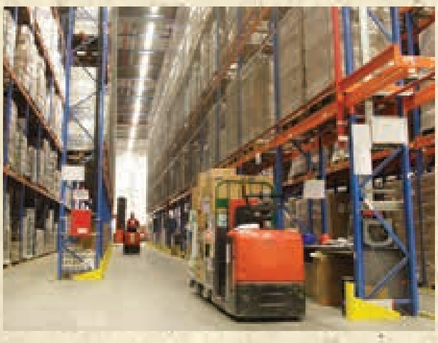

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Schwan's Home Services' nationwide depots build daily home-delivery orders from inventory provided by the company's national distribution center in Marshall, Minn.

many of these outsourcing decisions, service is emerging as a new driver. Shippers similarly recognize the value and support third-party logistics intermediaries provide as they navigate an uncertain economy that breeds inefficiencies and imbalances.

Rethinking a 30-Year-Old Supply Chain

When Schwan's Home Services began its network optimization journey in 2010, the company was challenged to make a very difficult decision. It had to shrink to grow.

The Marshall, Minn.-based direct-to-consumer division is the largest of Schwan's three operating units, and delivers to 90 percent of the 48 contiguous United States. It operates a route-based system that distributes product to consumers every one to two weeks. Seventy percent of the product it sells is co-manufactured with outside companies; the remainder is produced at eight manufacturing plants across the United States.

Before it revamped its network, Schwan's operated 475 company-owned depots around the country. The depots are inventory-holding distribution nodes that maintain a fleet of 10 to 15 propane-powered trucks at each location to make daily deliveries. Depots are replenished every 8.2 days out of Schwan's national distribution center in Marshall.

"What is unique about our business is that these depots are living and breathing sales companies," says Jeff Modica, vice president of supply chain, Schwan's Home Services. "Sales reps go out on pre-determined routes, carrying about 500 stockkeeping units (SKUs) in different quantities. Loads are built differently each day, depending on demand for that route."

By 2011, Schwan's realized its delivery network was critically outdated. Steady growth over 60 years, and re-investment in brick-and-mortar infrastructure, had bloated Schwan's footprint, accumulating unnecessary fixed costs. When Modica and his team evaluated the company's status, they recognized it needed a different way to operate — and an outside perspective. So they brought in Deloitte Consulting to marshal a network analysis and redesign.

"Large, complex networks often grow until the aggregate effect of many good decisions is no longer aligned with the marketplace," explains Long. "That's where Schwan's found itself."

To bring the Schwan's network in sync with the changing market, Deloitte had to consider the unique nature of its business model.

"For many businesses, the expense of running a network is non-human — it is asset-, fuel-, and technology-driven," Long says. "But Schwan's has a live selling network. Drivers get out of the truck and contact the customer. The higher

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percentage of built-in people costs makes getting the right answer more difficult."

When Schwan's considered these challenges, it set out to achieve three primary objectives.

"First, we needed a lower cost to serve," says Modica. "Second, we had to be more flexible. Buying and owning assets wasn't necessary. We had to be able to make variable costs out of fixed ones by using leased facilities, public cold storage, and third-party logistics (3PL) providers. Finally, we had to right-size the network."

Service- vs. Cost-driven Demand

While Schwan's U.S. supply chain transformation is unique because of its labor-driven, depot-centric distribution model, it demonstrates a common challenge that manufacturers and retailers face as they try to scale their networks to be more responsive to demand changes.

"A few years ago, we started noticing a change in product placement — less big-region, more small-region fulfillment," says Karl Meyer, CEO of 3PD, a Marietta, Ga., provider of high-touch, last-mile delivery service throughout North America.

"That shift was driven by fuel pricing, and the desire to get inventory closer to the market," he notes. "The big trend was reducing long-haul miles per load. Now companies are using the same solution for a different problem: velocity — or the speed to fulfill an order, whether it's into brick-and-mortar or virtual marketplaces."

This new service-driven impulse will stimulate greater demand for third-party partnerships, Meyer contends, especially because many brick-and-mortar companies don't have the capabilities to pop up a new DC overnight or integrate new technologies with enterprise systems.

"Companies are also more willing to conform to an established process that fits their needs," he says. "That shift has to happen. Five years ago, big box retailers that ran their own delivery services, or outsourced dedicated fleets, thought co-mingling freight was an insult to their brand."

Meyer compares this new sensibility to the way European organizations traditionally managed their supply chains — where solutions are perceived as cost- and service-driven, rather than proprietary.

As shippers become more receptive to upstream collaboration, 3PLs are softening their edges as well. The high price of fuel notwithstanding, many 3PLs have tried to break out of the transactional mold, and emphasize the importance of supply chain partnership.

"We're more open with customers, encouraging them to work together to reduce transportation spend," says Steve Buckman, vice president of operations, Kane Is Able, a 3PL based in Scranton, Pa.

Some companies demand as much from their service providers. Kane recently began working on a pilot program with a large retailer that required the 3PL to completely open its books.

"We would not willingly have done that five years ago," Buckman says. "Today, that's how we work with customers. Some still want a transactional relationship. But we want to help them understand the decisions we're making, and how they impact cost."

> "Five years ago, big box retailers that ran their own delivery services or outsourced dedicated fleets thought the idea of co-mingling freight was an insult to their brand."
>
> —**Karl Meyer,** CEO, 3PD

Raisin' the Business Case for Consolidation

Kingsburg, Calif.-based Sun-Maid Growers of California is one of Kane Is Able's collaborative distribution customers. The growers' cooperative is the largest raisin and dried fruit processor in the world, and uses 19 third-party-owned warehouses throughout North America to distribute product to mainline grocery customers. Kane Is Able serves that capacity in Sun-Maid's Mid-Atlantic territory.

"It has become common for grocery stores to order only what they need every week," says John Slinkard, vice president, customer and supply chain services, at Sun-Maid Growers of California. "They don't carry much, if any, inventory in their DCs. Order frequency has

Sun-Maid Growers of California cut transportation costs by using Kane Is Able's consolidation program.

accelerated over the past decade, and average order sizes have decreased."

Order sizes might have been 15,000 pounds a decade ago; now they typically range from 5,000 to 7,000 pounds. Because Sun-Maid doesn't have the size or scale of a larger company such as Kraft, it can't build full truckload (TL) shipments going into grocery DCs.

"These orders are on the cusp of being expensive less-than-truckload (LTL) moves," Slinkard explains. "Shippers moving only 500 pounds via LTL have no other choice. But when the load weighs 7,000 or 12,000 pounds, finding another shipper with similar volumes lets them pay for half the truckload, rather than the full LTL price."

When its warehouse provider in the Mid-Atlantic region ran into financial problems five years ago, Sun-Maid began looking for a new partner. Some of its other 3PL providers had internal consolidation programs in place, but when Slinkard visited Kane, he found a completely transparent collaborative distribution model.

"Kane offered to share that information," Slinkard recalls. "Consolidating shipments meant we'd pay a portion of a TL rate, rather than a true LTL rate, and Kane would provide a monthly report that broke down the data."

That was a deal-maker. The consolidation program Sun-Maid has participated in over the past several years has become a supply chain equalizer for the cooperative.

Strategically, Kane is focused on building relationships tied to collaborative distribution. That is a huge value-driver, especially for shippers in the mid-tier market.

"Five years ago, it would be typical for a retailer or manufacturer to come to us with outbound freight and simply ask us to bid the lanes," says Buckman. "Now a shipper might ask what we can do to optimize how product moves through its supply chain."

Collaborative Distribution from Source to Shelf

Kane's collaborative distribution model anchors everything it does. Orders typically come in through electronic data interchange and enter the 3PL's warehouse management system. Customer service reviews the orders, formats and validates the data, then releases them into Kane's LoadCon pool system.

The system automatically recognizes shipments for LoadCon customers, and puts the orders into a special work queue. It then evaluates and matches retailer required availability dates (RAD) with each shipment's destination and expected transit times — constantly building, rebuilding, and optimizing full truckloads.

Shippers such as Sun-Maid are similarly helping to expand the collaborative distribution concept, recognizing that the more stakeholders are involved in the program, the more opportunities there are to co-mingle freight. When the

cooperative got to a point where it was averaging 30-percent product consolidation, Slinkard approached Kane to find out how they could bump up that figure.

Let's Get Together

Sun-Maid's sales group began talking with grocery buyers that were receiving other customer shipments through Kane to see if they could align inbound moves. This would allow them to consolidate Kane truckloads and create fewer trips into the DC.

> "How do you convince the CEO you want to shrink to grow? In the beginning, it was difficult to understand that taking a step back is a step forward."
>
> —**Jeff Modica,** vice president of supply chain, Schwan's Home Services

Kane has taken a more passive approach with retailers, looking to soft-channel manufacturing partners into the program. It's more about listening and educating than trying to force the issue.

Nonetheless, some demand-driven grocery companies are using the 3PL as leverage. "We've had retailers select a RAD for a group of manufacturers, then ask Kane to deliver those orders together on a single truck," Buckman explains. "When a retailer takes that first step to get alignment on RAD, that's very high value."

Sun-Maid has found mixed success engaging retail customers to consolidate inbound transportation. As one positive example, Target provides the cooperative with weekly orders at the same time. "Six months from now, Target will order every Tuesday," says Slinkard. "Having that hard date helps us plan, and work with other warehouses where products ship from, to consolidate additional moves."

Sun-Maid's campaigning has helped push consolidated volume from 30 to 40 percent. Slinkard is even willing to steer his grocery business associates in Kane's direction.

"The more companies warehousing with Kane, the more consolidation opportunities are created," he explains. "We're never going to hit 100 percent — that's unrealistic. But I will take every opportunity I can to gain those significant savings."

The program has its limitations, however. Most large companies do their own consolidation at mixing centers, and have little need to participate in 3PL-driven programs.

Slinkard also avoids co-mingling certain product categories that pose problems for ambient raisin and dried fruit shipments. For example, pet food aroma attracts insects, and its packaging isn't always air tight.

Then there is competitive hubris, reflected in Meyer's observation about U.S. industry moving away from proprietary self-interest to more altruistic cost and service drivers. But Slinkard doesn't see this as a problem for Sun-Maid. A number of its competitors supply private-label goods to grocery store chains. Buyers are purchasing from both.

"Buyers may be telling them to move their shipments to Kane because then they can perform their own consolidation," he says. "I don't have a problem with that. If my competitor and I both have half a truckload, we both benefit."

Striving for Continuous Improvement

In Kane's collaborative distribution model, bringing more partners into the program amplifies the benefits to all supply chain partners. Schwan's found similar flexibility and continuity in the network analysis roadmap that Deloitte delivered.

The consultant approached the redesign using quantitative and qualitative analyses, IBM's LogicNet Plus network optimization tool, and Excel spreadsheets. The objective was to formulate a number of "quick hits" that Schwan's could make to immediately bring more balance to its network.

Deloitte considered depots where there was overlap or that had historically under-performed — simple quantitative assessments. Then it overlaid qualitative factors. For example, would a change in management personnel at the depot impact profitability? With this approach, Deloitte was able to eliminate one dozen facilities early on, providing momentum in its analysis.

One wrinkle the optimization project

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presented was making sure all of Schwan's functional teams were involved in the process, and understood how changes to the network might impact their operations. Concurrent with the network redesign, the company was also transforming its sales operation — evaluating its go-to-market strategy, with specific attention to how it delivers in neighborhoods, and its ability to meet on-time delivery expectations.

In this regard, sales and customer service are very much tied to network performance. Consequently, Deloitte initiated monthly cross-functional workshops with different stakeholders in the company. Keeping everyone informed meant the company didn't have to spend weeks explaining the changes to other departments.

More importantly for Schwan's, Deloitte helped build a center of excellence within the organization that could take the lead on optimization projects moving forward.

"These projects involve transferring knowledge, and building intellectual property," explains Long. "We worked person-to-person with Schwan's. When we left, the company had an operational team that could perform the analysis again.

"I characterize it as the innate transfer of real knowledge," he adds. "The organization is fundamentally self-capable. It can replicate this process as many times and as quickly as it wants."

Taking a Step Back to Step Forward

It took Deloitte 16 weeks during 2011 to collect and analyze data. Schwan's began implementing "quick-hit" improvements later that year and throughout 2012, and will evaluate 3PL pilot data and re-optimize the network moving forward into 2013. Modica and his team took Deloitte's quick-hit recommendations and went deeper, shuttering 54 depots.

Additionally, Schwan's has migrated to a hybrid model that uses existing company-owned depots, master depots with hub-and-spoke shuttle systems, and 3PL-managed facilities. As the company removes and/or re-tasks nodes, the network continues to change — setting the stage for further optimization in 2013.

While the financial impact of Schwan's network optimization is under wraps, it achieved marked operational and asset appreciation savings, in addition to avoiding some cost and gaining revenue from the sale of assets. But the greatest achievement was gaining the support and confidence of Schwan's leadership.

"How do you convince the CEO you want to shrink to grow — take $70 million off the top line? That's not an easy thing to do," Modica explains. "In the beginning, it was difficult to understand that taking a step back is a step forward."

One Size Does Not Fit All

If shippers have learned anything over the past few years, it's that flexibility is compulsory in today's marketplace. Companies need to have a nimble supply chain strategy capable of hedging risks due to unforeseen exceptions, flexing capacity and labor, switching modes and shifting assets, and aligning distribution networks to best meet speed-to-market and cost demands.

Four years ago, economic recession forced the issue for many companies. It was a matter of survival. Decision-making was reactionary. Now, as companies look to spring back into pre-recessionary growth mode, they fear the consequences of impulsive or uninformed planning and execution, or worse still — inaction. The "new normal" business environment offers no guarantees.

The challenge for companies such as Schwan's and Sun-Maid is right-sizing networks or asset needs when the right size remains nebulous. That's why one endeavored to optimize its distribution network by using a hybrid insourced/outsourced model; and the other explored collaborative distribution as a means to create better economies of scale in its transportation operations.

The supply chain provides an anchor for companies to tether their core business growth strategies without assuming undue risk and cost. But there must be slack to accommodate change. It's why industry at large has trended toward third-party logistics partnerships that favor variable-cost flexibility, insulate against risk, and allow companies to shrink or grow as demand dictates. It's why supply chain management acts as a force equalizer when myriad dynamics push and pull companies in different directions.

If there is one certainty in today's market, it's that transportation and logistics partnerships — and the ability to flex supply chains to demand — is as important now as it ever has been. ■

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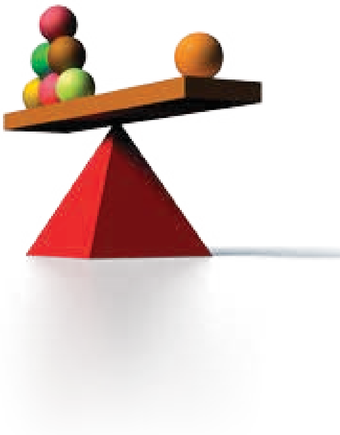

TECHNOLOGY:

The Leading Edge

A new wave of strategic software acts as a force multiplier, giving you greater supply chain power.

By Merrill Douglas

From inbound to outbound, from planning to execution, technology solutions give companies of all sizes the chance to play harder and smarter. Here's a look at some recent logistics IT innovations.

Collaboration Replaces Competition

Imagine two teams working for a food service distributor, each doing its best to increase supply chain efficiency and manage costs. The replenishment team works hard to ensure customers always get the product they need — ground beef, for example — but that there's never any excess inventory. The logistics team works just as hard to fill trucks completely, to keep down per-unit transportation costs.

"The logistics team might ask the replenishment team to buy 40,000 pounds of meat instead of 36,000 pounds, increasing the total dollar amount on the truck by 11 percent," says Steven LaVoie, CEO at Arrowstream, a Chicago-based technology vendor.

The replenishment team objects that a bigger order will boost inventory, increasing carrying costs. "Now you have two teams with competing problems," he says.

To solve this dilemma, Arrowstream launched *Crossbow*, a technology solution that helps replenishment and logistics staff collaborate to push overall costs as low as possible.

Arrowstream develops solutions for restaurant chains, distributors, and food manufacturers. As these companies see margins shrink, efficiency becomes increasingly vital to their survival.

Crossbow closes the gap between the concerns of replenishment and logistics personnel by looking not just at individual orders sent to vendors, but at the entire inbound product flow. Although they need to meet certain inventory and service requirements, companies usually have flexibility to adjust the way they place orders.

"To create a full truckload, instead of ordering


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42,000 pounds, the replenishment team can order 36,000 pounds, then add a 6,000-pound order of a different product," LaVoie explains. "Moving orders, taking them one day earlier or later, or scaling them up or down, creates immense flexibility downstream to ensure those orders are filling all the trucks."

To spot opportunities, *Crossbow* pulls item-level data from a company's replenishment system, then develops optimized routes for the inbound product. It can work in tandem with a transportation management system (TMS), or Arrowstream can provide its own TMS module.

Developing a highly detailed demand profile helps companies reduce their chances of getting stuck with an inventory of obsolete product.

Once the transportation team develops an optimal plan for inbound shipments, it shows the replenishment team how much money the new strategy will save and how much it will reduce the volume of stored product.

"Overall, this approach reduces total inventory by two to five percent," says LaVoie. Most companies use *Crossbow* to generate a new plan about once a week, as customers change their ordering patterns.

One Arrowstream customer, a large food service distributor, used to rely on eight people to coordinate replenishment and transportation. They generated about $250,000 in savings each month, but with *Crossbow*, they did even better. "Those savings quadrupled within a few years," LaVoie notes.

Putting Things in Proportion

Just as Arrowstream is closing the gap between replenishment and transportation, software developer Logility recently introduced a tool to bridge the needs of planners concerned with demand, sourcing, and production.

Logility's Proportional Profile Planning function — a new feature of its *Voyager* supply chain solution — is designed to give planners a fine-grained view of product demand.

For example, a planner working with a line of athletic shoes might concentrate on predicting demand for the men's and women's versions of a particular style, says Karin Bursa, marketing director at Logility in Atlanta. But it would be useful to understand in greater detail what consumers will buy, and where.

"Planners want to be confident that at the level of gender, style, color, size, and market, they have a good forecast," she says.

For instance, how will a particular gray shoe in a woman's size eight perform in the northeastern United States?

Picture This

Using historical data and tracking sales as they occur, Proportional Profile Planning builds a picture of a product, forecasting demand for each stockkeeping unit (SKU) in individual markets. "Planners can hand that information off to the manufacturing and sourcing teams, telling them precisely what items they believe the market will buy," Bursa says.

In the past, many companies used spreadsheet software to help them take this kind of deep dive. "They might use their supply chain software to produce a forecast at a certain level of detail, then go outside the system to gather more data," Bursa says. Logility's software users can conduct the whole process within *Voyager*.

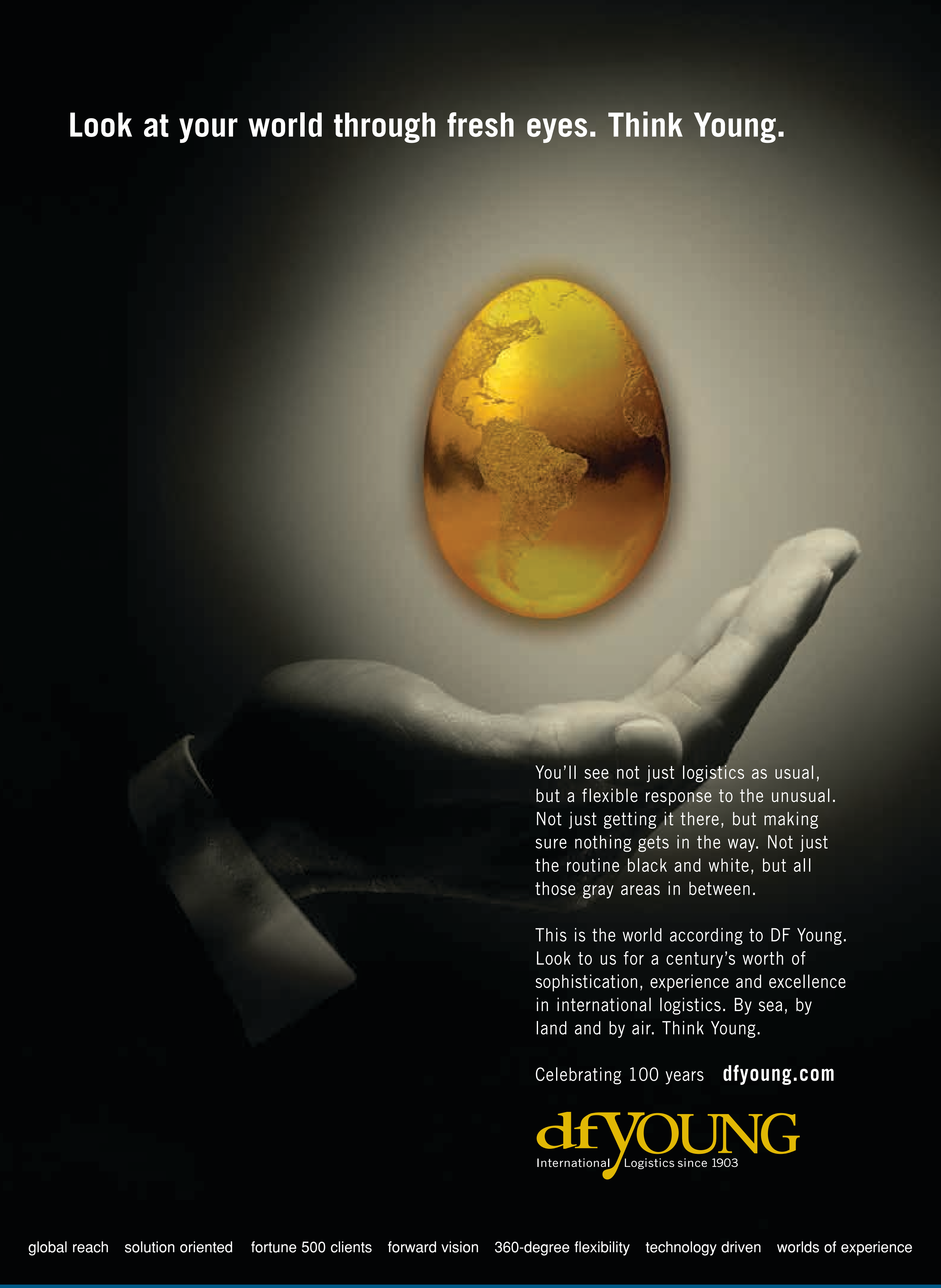
Tracking Prediction Performance

Once the system produces a forecast, it also monitors how well that prediction performs. "Users can determine whether actual sales were different than the profile predicted they would be," Bursa says. "The system offers the ability to measure and improve the profiles over time."

Developing a highly detailed demand profile helps companies reduce their chances of getting stuck with an inventory of obsolete product. And by creating profiles that change over a product's lifecycle, the system allows companies to fine-tune their replenishment orders, based on the best-selling SKUs. "Instead of producing a size six woman's shoe in the replenishment process, a manufacturer might create sizes ranging from seven to nine," Bursa explains.

Another technology innovation Logility customers are using to refine their replenishment

TECHNOLOGY



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strategies is multi-echelon inventory optimization (MEIO). Logility's MEIO solution analyzes data on finished goods held in all of a company's locations, plus raw materials and work in process. It also considers information on lead times, supplier reliability, and demand variability, crunching the numbers to determine how much inventory a company should hold in order to meet its service commitments.

"It's powerful for companies that have postponement strategies to delay the final manufacture of the finished goods until needed," Bursa says.

> "Learning about possible disruptions earlier gives shippers more time to find compensating actions."
>
> —**Lorenzo Martinelli,** senior vice president, corporate strategy, E2open

Where Is It?

Many technology solutions help shippers keep track of product that is hundreds or thousands of miles away. Zebra Technologies uses radio frequency identification (RFID) technology to locate items inside a factory or distribution center (DC) — including two of its own warehouses.

Zebra offers two RFID-based location platforms. Both employ tags that users attach to movable assets, plus sensors that users install at various points within a facility. Each time a sensor transmits a wireless signal, it receives a response from any tags within communication range. Using triangulation, much as global positioning systems do, the Zebra system calculates the current location of each tag.

"That data forms the basis for the business problems Zebra tries to solve," says Mike Mulligan, director of industrial manufacturing solutions at Zebra Technologies in Lincolnshire, Ill.

One of Zebra's location platforms, called WhereNet, tracks items that move as often as every three to five minutes, and finds them within 4.5 feet. The other, called DART, can locate items that move as often as once per second, and can find them to within about one foot.

Auto manufacturers use Zebra's RFID systems in several ways — for instance, to keep track of large racks that hold components, or to track finished vehicles moving through the quality control process.

Earning Their Stripes

In addition to applying the location technology to customers' challenges, Zebra started using it in 2012 to improve its own supply chain operations.

Zebra implemented the Oracle enterprise resource planning system, which made it possible for several employees in a DC to pick items for a single order. Workers assemble those orders in a flexible staging area, with different sections devoted to small, medium, and large orders.

The first person to pick an item for an order — let's call it Order 15 — retrieves a "locator." This device — which looks like the "table tents" used to display the daily specials in restaurants — comes with a DART asset tag attached. The picker sets the first item in the staging area, then places the locator on top, marking that as the location for Order 15.

"The order itself may move from one staging area to another as the order gets bigger over time," Mulligan says. But thanks to the location technology, any picker working on that order will be able to find it.

As the DART system tracks the locators, the screen on each picker's bar-code scanner displays those devices on a map, with associated order numbers. Each time pickers need to add an item to Order 15, they can find it, even if it has moved.

"This system allowed us to increase throughput in the warehouse while maintaining the same number of materials handlers and pickers," Mulligan says. It has also improved Zebra's ability to meet delivery commitments.

Going Social

Facebook, Twitter, and other social platforms have become so ingrained in our personal and business lives, it's no surprise that some companies want to harness social media to better manage supply chains.

Zebra Technologies' DART locators and sensors enable workers to track assets moving throughout the warehouse.

E2open is a case in point. A provider of cloud-based solutions for collaboration across trading networks, the Foster City, Calif., company is exploring several options for integrating social technologies into its E2open Business Network.

Customers identified three ways in which they would like to employ social networking technologies, says Lorenzo Martinelli, E2open's senior vice president, corporate strategy.

1. Let trading partners collaborate on supply chain issues within a proprietary social environment. "Today, we notify trading partners when a problem occurs," says Martinelli. "They go offline to communicate, then come back to our system to execute the solution they agreed on." But users want a more integrated approach to the entire set of conversations and transactions.

In E2open's vision, when a problem occurs in the supply chain, that information will appear within its social platform, much as a status message appears on Facebook.

For instance, the Business Network might receive news that a shipment is running late. Among the items in that container are several crucial parts that a factory needs to meet its commitments. "The customer, supplier, and logistics provider can work together toward a solution — arranging expedited transport, or sourcing parts from another warehouse," Martinelli says.

The partners use the social platform to discuss their options, then, once they make a decision, E2open's system will transmit the data needed to execute their plan.

2. Monitor conversations on many social networking sites to glean information companies can use to refine their demand plans. For instance, the forecast for a line of lipstick might dictate that the manufacturer produce equal quantities of pink and red. But on social networks, 80 percent of the positive buzz about this product mentions only the pink. "That may be an indicator that demand will not be 50-50," Martinelli notes. Some marketing departments already use this strategy, but it holds potential for supply chain management as well.

3. Monitor social media to learn about political demonstrations, port shutdowns, container shortages, rising rivers, or other conditions that could threaten a supply chain. "Learning about possible disruptions earlier gives shippers more time to find compensating actions," Martinelli says.

Because E2open has learned that some of its customers want solutions based on social media, it is working to introduce the notion to a broader audience. The company plans to develop prototypes of these solutions, so people can get a feel for whether they provide real value. E2open has also created a LinkedIn group, the E2open Social Supply Chain, where anyone who is interested can discuss the possibilities.

High-Tech Helpers

Innovative logistics technologies are helping companies improve visibility into their supply chains and gain better control over inventory, service, and cost. Implementing the right tool can be just the boost businesses need to gain a competitive edge. ■


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[CASE STUDY]
DIRECT-SHIP SOLUTION ON TAP

Craft Brew Alliance (CBA) is a small firm with a big, important friend. Formed from the merger of three craft brewers – Widmer Brothers Brewing, Redhook Ale Brewery, and Kona Brewing Company – CBA generated revenues of $149 million in 2011. But CBA had relied on its relationship with beer giant Anheuser-Busch for its distribution since the 1990s. Today, Anheuser-Busch owns 32 percent of the craft brewing company.

CBA shipped beer from its three breweries – in Portland, Ore.; Woodenville, Wash.; and Portsmouth, N.H. – to 12 Anheuser-Busch distribution centers around the United States. The DCs then delivered orders to the wholesalers that make up CBA's customer base.

But a few years ago, Anheuser-Busch started closing those DCs. Too small to run facilities of its own, CBA started a transition to a direct-ship distribution strategy.

"At the same time, we were looking at an enterprise-wide supply chain solution," says Kyle Jennings, senior director, supply chain at CBA in Portland. The solution that CBA chose – the *Voyager* suite from Atlanta-based technology provider Logility – included a transportation module that would support the new distribution pattern.

In the past, CBA breweries shipped full truckloads to the DCs. "Workers picked and packed orders to build loads for wholesalers," Jennings says. With the transition to direct shipping, CBA would have to build and route those deliveries.

"We have to look at what makes sense from the transportation side," says Jennings. "What are our minimum stop quantities? How often can we deliver to locations and still be cost effective? We built those functions into the Logility tool."

CBA executives feared that without Anheuser-Busch's DCs, the cost of shipping beer to customers would rise by as much as 40 percent. "Actually, our freight budget only increased by eight to 10 percent," Jennings notes. That's due in part to the fact that CBA now enforces minimum order quantities, but Logility's Transportation Performance Management (TPM) software helps as well. "Now our trucks make multiple stops, optimizing that routing for us," he says.

Not only didn't the switch to direct shipping add major costs, but the TPM software helps CBA maintain high service levels. "For the past three months, we've been at approximately 99.5 percent in-stock," Jennings says.

Along with TPM, CBA implemented *Voyager* planning modules for demand, inventory, manufacturing, and replenishment planning, automating functions that it used to perform on spreadsheets – if it performed them at all. Gaining a better picture of current inventory and future demand allows the breweries to design their production schedules more efficiently. "We've also provided visibility out for a few months, so they can better plan their labor," Jennings says.

The company has also seen a 60-percent drop in the volume of "aged beer" – product it has to write off because it has been sitting in inventory so long wholesalers will no longer accept it.

With greater visibility and better planning, CBA can compete in the beverage market as though it were a larger company. "Many of our competitors don't have the software intelligence we do," Jennings says.

Implementing a transportation management tool allowed Craft Brew Alliance to stop relying on a large distributor and begin shipping direct to customers.

MATERIALS HANDLING EQUIPMENT:

Flex Appeal

Refining materials handling systems to be more agile, flexible, and dynamic acts as a competitive force equalizer.

by Joseph O'Reilly

With a swipe and a click, e-commerce is fundamentally altering consumer buying behavior. In the process, it is triggering a paradigm shift in how companies manage their distribution and fulfillment operations.

More shoppers are going online in search of competitive prices, and their expectations about product selection, fulfillment speed, and convenience are forcing traditional brick-and-mortar retailers to step up their game. E-commerce has made expedited shipping an expectation, not an exception – which has a resounding effect throughout the supply chain.

"A significant period of supply chain disruption is beginning," says Karl Meyer, CEO of 3PD, a Marietta, Ga.-based provider of high-touch, last-mile delivery service throughout North America. "The way customers interact with retailers is changing."

While the competitive stakes are amplified between virtual retailers and those with physical locations, companies that have significant operations in both spaces – "click-and-mortar" businesses – face the more compelling supply chain challenge. Nowhere is this more apparent than inside distribution centers (DCs).

"Brick-and-mortar companies are looking to find solutions that merge orders in transit," says Meyer. "Historically, big-box retailers held inventory in domestic or import DCs, then pushed it to stores. When distribution channels shift from full truckloads into a store to orders moving one at a time through different modes to end consumers, retailers have to pass along or account for those additional costs. And they have to take volume out of the truckloads going to stores."

The convergence of direct-to-consumer and

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direct-to-store fulfillment models not only dictates where companies locate distribution nodes, but also how they equip them.

"In a traditional DC, much of the activity involves picking full cases to pallet, then shipping pallets to stores through a private fleet or contract carrier," explains Bruce Stubbs, director of industry marketing for Intermec, an Everett, Wash.-based mobile device manufacturer. "They still use the same technologies to do that, but most of the time no packing process is involved."

This poses a problem for some companies, especially in inventory management and control.

"When they receive product, they have to

THE RISE OF THE WCS

As much as technology is changing the way consumers buy product, it's also shaping a new direction inside warehouse facilities. Companies are tailoring solutions that can address multi- and omni-channel distribution and fulfillment. That begins with warehouse management systems (WMS) and warehouse control systems (WCS) that orchestrate motions within a distribution center.

For example, a facility that has consolidation or accumulation positions – where workers divert totes and cartons by transport conveyor under the control of a WCS – operates with finite capacity. "Under the old paradigm, companies might use their WMS to divide work by waves, which represent the materials handling system's capacity," says Tom Singer, principal for Raleigh, N.C.-based materials handling integrator and supply chain consultant Tomkins International. "Businesses can't afford to be that granular today. They need a more fluid environment, so if one lane or accumulation position is open, they can release work, rather than wait for the full wave to be completed."

More operations are allowing the WCS to control the actual release of work to the warehouse floor. That demand is triggered not only by e-commerce, but also by organizational mandates to increase throughput and squeeze more volume out of existing facilities. It often makes more sense for the WCS to control the release and induction of work into the system, rather than running set WMS waves, and dumping totes and cartons into the system.

Using a WCS is by no means a novel concept, but it is gaining traction in a distribution environment that has been dominated by WMS machinations over the past several years. Micro-trends contributing to this change include more aggressive service levels and delivery expectations; stockkeeping unit proliferation; and smaller orders shipped with greater frequency.

"These factors put stress on systems," says Singer. "Warehouse management systems have the functionality to support this proliferation, but they're still wave-based and labor-focused. If companies are installing materials handling systems that need to be monitored in real time to measure available capacity, it makes more sense to turn to a WCS."

Because warehouses have become more automated, investing in WCS – while still costly – is easier to justify. Materials handling solutions are becoming more creative, especially in terms of implementing sophisticated conveyance systems, and automated storage and retrieval systems (AS/RS) infrastructure, within existing footprints.

Shippers and service providers are also considering how to integrate robotics and automated vehicle guidance systems into different aspects of their warehouse operations.

"The opportunity to build a fully automated DC with a variety of materials handling equipment – unit sorter, AS/RS, mini shuttle – has become more viable," Singer says.

There is not yet an established standard for how companies approach materials handling or DC optimization. With the way e-commerce has enveloped industry so quickly, many companies are pioneering their own strategies – inside and outside the warehouse.

EQUIPMENT

EQUIPMENT

determine whether to allocate a certain amount for direct-to-consumer shipments and the balance for retail store shipments, or use the same inventory pool to handle both," says Stubbs. "Companies can separate inventory by channel, or pick from the same location and divert it to different areas within the DC.

"The situation presents many challenges – not just systematically, but also in terms of processes," he adds. "It affects how companies lay out their facilities, and what types of materials handling solutions they deploy."

Engineering Change

Traditional brick-and-mortar retailers looking to capture market share may feel pressured to match wits with Internet-only sellers. One way they gain competitive advantage is by pulling e-commerce operations into existing DCs that have equipment set up specifically to manage store-quantity shipments.

"Multi-channel environments are starting to diversify equipment to allow the same inventory to service both direct-to-consumer and brick-and-mortar stores," says Bryan Jensen, vice president of St. Onge Company, a York, Pa.-based supply chain engineering consulting firm.

Equipment differentiation is tied to peak-season volumes and shipper capacity to scale with these demand changes.

The dilemma for click-and-mortars is finding an equipment solution that allows them to manage a tenfold peak for three weeks, and remain economically viable for the rest of the year. "It's like a manufacturer trying to produce everything for the holiday season in one month," Jensen says. "They could never justify investing in the equipment to do that."

Companies have become creative in how they mix and match modular and semi-automated materials handling solutions to flex with demand, rather than simply throwing capital and equipment at the problem. For example, instead of buying two automated unit sorters to cover a peak, a company might maintain one unit sorter, and use a separate pick-and-put wall operation consisting of racks and bins.

Some companies adopt simpler materials handling infrastructure footprints that are more flexible. "Sometimes it doesn't make sense to choose the most complex or expensive solution," Jensen says. "Automation is a wonderful enabler, but it can also be rigid in what it requires to be effective."

Companies cutting their teeth on e-commerce may hesitate to make significant capital investments without knowing what normal will look like down the road. This begins even with basic racking set-ups.

"The standard contemporary pallet rack is still the most popular way to store product, because it's the least expensive," says Kevin Curry, national accounts manager, Steel King, a Stevens Point, Wis.-based manufacturer of rack, rail, and mezzanine solutions. "Many companies do not want to spend capital on new brick-and-mortar. They want to build up, go faster, and utilize cube better. The more conventional way – single- and double-deep selective racking – requires an aisle and a fleet of fork trucks. That represents the lion's share of systems in the United States."

> Automation has a direct, if largely unseen, impact on facilities' physical infrastructure. More advanced technologies and conveyances demand precise engineering.

Automation by Design

Accelerated fulfillment expectations have forced automation into the DC. But unlike a decade ago, when fledgling e-commerce companies threw the silver-bullet solution at every challenge they encountered, companies are now more judicious in how they integrate automated and manual processes.

Shippers are less inclined to invest long term unless they possess a concrete understanding of their business needs. It may not simply be a matter of buying a different kind of conveyor system, but rather a less complex solution – or using more generally applied equipment, as opposed to specific systems that will only work under certain circumstances.

Automation brings benefits and disadvantages – which is why materials handling suppliers, integrators, and customers spend so much time and attention devising appropriate strategies. It's also why a lot of companies that are still early in their perceived growth curve, or have yet to reach a plateau, rely on third-party logistics (3PL) service providers rather than aimlessly sinking capital into new materials handling systems and facilities.

Jensen cites the example of facilities that use a parts-to-picker strategy – whether it's a mini-load system, multi-shuttle set-up, or robots. In effect, these tools all do the same thing: pickers stand in one place and product comes to them. This approach allows companies to automate their facilities, keep operators all in one place, and use space more economically.

Parts-to-picker systems don't easily move above the volume of what that system will support, however. "If it performs 60 cycles per minute with 10 cranes, it's 600 cycles a minute – no more, no less," Jensen says. "If volume spikes, there's no way to get to that product – and no way to fulfill those orders."

While parts-to-picker solutions haven't changed the profile of facilities the way automated storage and retrieval systems (AS/RS) did by raising roofs, they can impact the way DCs are laid out because they become the keystone in the distribution process. Their location within a building is critical to all other product flows.

Automation also has a direct, if largely unseen, impact on facilities' physical infrastructure. More advanced technologies and conveyances – especially build-to-suit, high-rise AS/RS systems – demand precise engineering. "The machines read the product's location, and if the rack is off one-sixteenth of an inch, the system won't be able to retrieve that tote or part," Curry notes.

The Waiting Game

Through process evolution and equipment investment, warehouse automation empowers companies to flex capacity and labor to meet rapidly changing business requirements. It's not a silver-bullet solution; rather, one means toward an end. The way companies handle materials in the distribution environment continues to change.

While an element of lawlessness pervades the way industry is broadly approaching e-commerce, the lack of a defined model has also allowed companies the latitude to be creative in how they design standalone and multi-channel facilities, then align their distribution networks.

Jensen predicts more long-term capital investment will materialize over the next decade as the direct-to-consumer business matures. Distribution networks will likely be more diverse as companies depend on a mix of highly automated and less-automated facilities that they can turn on and off to match seasonality demands.

The pressure to automate will largely depend on unique shipper requirements. If a company

Sophisticated automated storage and retrieval systems can deliver significant efficiency gains – but also require significant planning and investment.

only needs one distribution building, and its average annual output is 40 percent of peak, little incentive exists to tackle full-scale automation.

But if it operates 10 DCs and 40 percent of its peak volume is the average, it can fully automate four of those buildings, because they will always be in use. The other six facilities' worth of throughput can be purposed as a pop-up 3PL, an augmentation of a brick-and-mortar facility, or for manual picking to support automated throughput.

"As companies come to understand the volume, complexion, and nature of their order profile, total throughput requirements, and customer service value, they can start to confidently invest in long-term fixed infrastructure," says Jensen. ■

EQUIPMENT

EQUIPMENT

[CASE STUDY]
ANYTHING BUT CHILD'S PLAY

When Toys R Us' Canadian business recently decided to open a new distribution center in Delta, British Columbia, to support brick-and-mortar stores and direct-to-consumer fulfillment, it turned to Toronto-based third-party logistics provider SCI Logistics to help equip and operate the facility. The 180,000-square-foot DC, located near Port Metro Vancouver's Deltaport container terminal, is positioned to receive and re-distribute goods from overseas and domestic manufacturers.

"The Delta facility complements Toys R Us' omni-channel distribution points and assortment strategies across Canada," says John Ferguson, president of SCI Logistics. "In addition to supporting retail stores, the goal is to ship direct-to-consumer orders from the same facility. We are working with the e-commerce and logistics team at Toys R Us to develop our West Coast direct-to-consumer strategy."

Toys R Us can update its automated sortation system daily to adapt to changing demand patterns.

Segmenting inventory for unique channel fulfillment has been less burdensome than the operational challenges that sortation and picking presents. SCI equipped the facility with a 25-divert automated sorter system that automatically builds orders destined to stores and the Toys R Us eastern distribution center.

"The sorter logic can be updated daily to adapt to changing demand patterns by end destination," says Ferguson.

Scalability was important in the new DC set up. The fully automated sortation system allows Toys R Us to support large seasonal swings that are common in the retail business.

The Delta DC complements the toy retailer's existing Canadian distribution footprint, which features three facilities that serve 74 stores, express store locations, and an e-commerce fulfillment center.

WORKFORCE MANAGEMENT:

The Human Factor

Training counts. A skilled, motivated, enthusiastic, and optimistic supply chain workforce gives you a strategic and competitive advantage.

By Merrill Douglas

Goods don't flow on their own. It takes a well-trained, well-motivated workforce to run a competitive logistics operation. When employees understand their work and know how to do it right, they help a logistics facility operate efficiently. When supervisors measure performance and reward workers who exceed expectations, that also helps an operation shine.

Before you can train employees, you have to define the work you expect them to do. "Training evolves from several different steps," says Bryan Jensen, vice president and principal at St. Onge Company, a supply chain engineering and logistics consulting firm based in York, Pa. "The first is developing standard operating procedures or work instructions."

When members of the consultancy Total Logistics Solutions need to learn and document a process for a client, they put on jeans and hit the warehouse floor. "Picking orders and receiving materials helps us understand the process from the user's perspective," says René Jones, founder of the Burbank, Calif., firm.

Then, before putting documentation into final form, Jones and his team ask the warehouse associates for feedback on it. That helps ensure the consultants understand the nuances of the job; it also helps them gain the employees' cooperation.

Once the process is on paper, training can take several forms. St. Onge Company, for example, might develop instructional manuals for in-house trainers to use; create a syllabus and send one of its own trainers into the classroom or distribution center (DC); or produce interactive, computer-based training modules.

Whether delivered by a human teacher or via computer, a formal syllabus makes training consistent. The alternative—sending a new

WORKFORCE

[CASE STUDY]

PRE-TRAINED AND READY TO WORK

For many companies seeking well-trained logistics workers, the best place to look is a local community college. Logistics training programs at public institutions have become important sources of applicants who know how to perform basic logistics tasks.

Frank Brunckhorst Company, maker of Boar's Head Brand deli products, is one of many employers that turn to local logistics training programs to help staff distribution centers. The company's facility in Columbus, Ohio, has found qualified applicants among graduates of the LogisticsART (Attracting and Retaining Talent) program at Columbus State Community College.

Boar's Head, the distribution arm of Frank Brunckhorst, opened the Columbus DC in August 2011. The facility distributes Boar's Head product to all of the United States except the New York City metropolitan area, which is served by a DC in Brooklyn.

The Columbus facility currently employs 31 associates, whose jobs include receiving, shipping, picking, packing, and serving as team leads. "Our employees have to wear multiple hats," says Molly Sidelinger, the DC's human resources manager.

To date, LogisticsART has supplied all the front line employees for Boar's Head's Columbus DC. Funded by a federal grant, the three-week program introduces students to the logistics sector and trains them to operate a forklift, work with a warehouse management system, use radio frequency scanning equipment, and follow safety procedures. Other topics include resume writing, behavioral interviewing, and customer service.

In addition to classroom training, students get hands-on experience with local companies. That's a help to future employers. "They've already had exposure to the real world," says Jim Dykstra, plant manager at the Boar's Head facility in Columbus.

Each time a group completes the program, LogisticsART sends those students' resumes to participating firms, which may contact them for interviews.

Although graduates arrive with fundamental logistics skills, those who come to Boar's Head also get further instruction. "Most of the LogisticsART training is in a non-refrigerated environment," Dykstra explains. Boar's Head uses both classroom and on-the-job training to teach new recruits how to work with refrigerated products and meet the company's high accuracy and quality standards.

"We have our own unique software for picking and shipping, so we have to train them in that as well," Dykstra says.

As it delivers trained candidates, LogisticsART also helps streamline the recruiting process. "The program connects us with workers who are truly interested in moving into the distribution world," says Dykstra. "If we posted an ad, we would have to screen and filter a lot of applications to find the person we're looking for."

employee onto the floor to "buddy train" with an experienced worker—introduces variability. The employee who trains on the floor with Tom might end up doing the job a little differently than one who trains with Jane or Bob.

Execution consistency increases dramatically with formal training, making it easier to measure the value each individual brings to the job. "They've all been given the same tools and training, so the ones who perform better – when all other factors are equal – should be better employees," Jensen says.

In addition to being consistent, the best training is repeatable. Any instructor should be able to deliver the same material in the same way. In one sense, computers are the ideal teachers, because they will never emphasize one topic at the expense of another.

When humans take charge, it is important to introduce standards. "There must be


We make logistics
child's play.

a 'train-the-trainer' approach, so that trainers – when you do have them – can repeat the same input and get the same results on the output," says Jensen.

Show Me Your Phone

Because not everyone learns in the same way, or at the same pace, some experts emphasize the value of custom-tailored training. At Total Logistics Solutions, for instance, trainers might measure technology expertise at the start of a class by asking everyone to pull out their cell phones.

Associates who carry smartphones tend to have an easier time adapting to new technology on the DC floor. It's a rough gauge, Jones admits, but the distinction often holds. "If they have an older phone, it may take that individual a little longer to pick up the technology," he says.

Customized training is also important to third-party logistics (3PL) provider Ryder System, which uses the principles of Lean labor management in all its DCs. Managers who tailor training to individuals' needs promote greater efficiency, says Chris Merritt, Ryder's vice president and general manager, global retail supply chains. Custom training can become important, for instance, when a DC takes on extra staff during a peak volume season.

Some of those seasonal workers arrive with 20 years of experience operating forklifts. "There's no point in taking them through a three-week training process if they already possess the skills," Merritt notes. Conversely, when businesses need temps to perform tasks they have never done before, they might need extra training.

Once an employee learns to do a job, an operation built around the Lean principle of continuous improvement provides opportunities for further coaching.

For employees who don't quite have the hang of a job, feedback helps them get the details right. Once they have the basics down, response from supervisors can also encourage associates to work faster and better. Often, this kind of encouragement involves concrete incentives.

Recording worker performance data helps gather information companies can use to create incentive programs.

Rewarding Performance

It takes careful work by industrial engineers to break the many tasks performed in a DC into measurable units, then set expectations for each of those tasks. The trick is to develop neutral metrics that don't favor one kind of work over another, but simply count what each employee accomplishes – such as locations visited, distances traveled, and boxes picked.

Unfortunately, many companies—especially large ones—base incentive programs on the wrong kinds of measurements, says Jim Zimmerman, chief operating officer at nGroup Performance Partners in Fort Mill, S.C. Companies contract with nGroup to provide

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workers or manage in-house employees for their manufacturing and distribution operations.

"Companies look at what makes or costs them money," Zimmerman says. So when managers try to measure productivity, they focus on cumulative measures such as cubic meters moved into a DC, or the dollar value of product shipped.

Such measures might be relevant to the company's profit-and-loss statement, but they don't speak in meaningful terms to the people who are paid to move the product.

"We prefer to use more common-sense feedback, such as cases moved, pallets picked, orders completed, garments hung, and displays fulfilled," says Zimmerman.

nGroup sets goals based on those metrics, then trains employees on the best methods for achieving those goals. "When the employees meet and exceed those standards, both in production and quality, they receive 'Extra for Excellence' pay," he says.

Lean labor management practices that identify correct processes, then measure the employees who perform those processes, help companies match people to jobs.

Defining Expectations

Along with providing a fair way to determine who deserves a bonus, metrics of this kind provide a clear language that supervisors can use to encourage teams to increase their output. Simply stating that a team needs to get more orders out today than yesterday means little to associates who believe they're already picking as many orders as they can.

"We try to break it down and say, 'We need to pick 57 orders per hour. Last hour, you were at 52, so you need five more to meet the standard,'" Zimmerman says. Workers who want to earn excellence pay have to pick six more, he notes.

Companies that develop precise, consistent standards for how to perform work in a DC, train employees to meet those standards, and reward them when they exceed productivity goals will get extra value from their workforce.

Lean labor management practices that identify correct processes, then measure the employees who perform those processes, also help companies match people to jobs. A supervisor in charge of 30 people doesn't need to form an opinion on each one of them; data pulled from the warehouse management system and other sources provides an objective picture of each employee's performance and aptitudes.

Ask the Employees

In some cases, getting employees to work productively is less a matter of training and measurement, and more a matter of morale. Unhappy workers will slow a workplace down.

If poor morale seems to lie at the heart of a logistics operation's problems, the first consultants to engage in the search for a solution are the employees themselves.

Jones tells the story of a company that suffered from high employee turnover on the warehouse floor.

"We asked several employees why turnover was so high," he says. "They told us the facility was too hot."

Without fans or proper ventilation, workers felt completely drained at the end of the day.

"Most individuals said they would rather work someplace else and make a little less money, but at least have energy when they got home," Jones recalls.

The consultants persuaded company management to bring better ventilation into the building. "Within months, the turnover dropped from extremely high to almost none," says Jones.

Productivity increased as well. In the past, employees performed well in the morning, but the higher the sun climbed, the less they accomplished. Once the building was ventilated, productivity remained fairly constant.

Asking questions, taking measurements, setting standards, capturing data—to a large extent, training and managing logistics employees is all about paying attention. A company that gives the details their due on the warehouse floor, and enlists its workers in that effort, can gain a strong competitive advantage. ■

SITE SELECTION:

You Are Here

Looking past the obvious and digging deep when making site selection decisions will multiply your logistics capabilities.

by Merrill Douglas

It's easy to find economic development officials who'll tell you their spot on the map is the ideal place for your distribution center (DC). It's much harder to evaluate their claims and discover the location that offers your company the best competitive advantage.

A site in a business-friendly location with convenient access to transportation resources can give your supply chain a major boost. Other factors—such as distance to suppliers and customers, and access to a suitable workforce—matter as well.

To choose the perfect location, you need to understand your operation and consider how the variables affect your company's situation, then carefully weigh each location's pros and cons.

"It's a balancing act," notes Jeff Forsythe, principal at McCallum Sweeney Consulting, a global site selection provider based in Greenville, S.C. The best area from a transportation perspective, for example, might not be the best one for real estate or labor.

Before considering those tradeoffs, companies shopping for a DC site must learn as much as possible about their current supply chain network.

At Nexus Distribution, a third-party logistics (3PL) provider whose portfolio includes site selection services, the process usually starts with an effort to collect as much data as possible about the existing logistics network. "Ideally, that data involves stockkeeping unit (SKU) information, so we can see what DCs products are flowing in and out, and where those products are coming from," says Jeff Cox, Nexus Distribution's director of logistics.

Shippers should also consider how their supplier base might change when they add a new

DC, says Rich Thompson, managing director and Americas leader for supply chain and logistics solutions at Chicago-based commercial real estate services firm Jones Lang LaSalle.

A shipper or its consultants may feed the necessary information into a modeling program to develop a list of candidate regions or sites. The software analyzes factors such as the transportation resources available in a particular market, the cost to use those services, and the transit times between that location and the company's suppliers and customers. The model might also consider factors unrelated to transportation.

"Analysts use modeling tools to evaluate energy, labor, tax incentives, and the customer base in locations where a business may be buying or selling," says Craig Stoffel, vice president of Omaha-based Werner Global Logistics, another 3PL with a site selection practice.

Weighing the Options

Business priorities dictate which factors receive the most weight in site selection calculations. Consider, for example, a location that offers many different transportation options at competitive rates, but is a two-day drive from most of the company's suppliers. "The shipper may decide it can't live with that much distance," says Terri Bennett, vice president of customer solutions and information technology at Nexus Distribution.

Site selection often requires balancing all the variables. "Part of the exercise is trading off costs and service levels," says Will Hansen, principal owner at Nexus.

Project timetables might also influence the choice. "A shipper may need a 750,000-square-foot distribution center quickly,'" says Thompson. That imperative could steer it away from California's Inland Empire, for example, where properties of that size are not readily available.

Other local conditions also help determine the shipper's final choice. For example, a computer model might indicate a region that meets all the criteria, except that shipments will cross terrain that is often beset by hazardous winter weather.

Or restrictions on rail service might pose problems. "All rail tracks are not created equal," notes Stoffel. "Some tracks cross bridges that have weight limitations."

Labor is another major cost factor companies must consider in the site selection process. To find locations with the right kind of talent pool, Jones Lang LaSalle identifies the characteristics a company wants to see in its workers, then develops a detailed labor profile for each candidate location.

McCallum Sweeney also focuses on workforce analysis, examining federal, state, regional, and local labor data, including wage surveys. They interview executives at six to 10 existing facilities in each potential market, asking about factors such as turnover, absenteeism, workers'

Locating a facility that suits all of a company's needs requires in-depth research and analysis.

OBSTACLES OVERSEAS

If choosing the right site for a U.S. DC is a daunting task, it can be downright scary for U.S. companies checking out locations in overseas markets.

Take China, for example. "Some companies can tell horror stories about real estate companies, or representatives from particular provinces, selling the same land three times over," says Craig Stoffel, vice president of Werner Global Logistics. Or local officials might promise access to electrical power or transportation resources that don't actually exist.

How do you protect yourself when you're setting up shop in an overseas market? Get help from an expert.

"Make certain that whoever you're working with on site selection has previous experience in those markets," Stoffel says. That experience should be recent, because local regulations and incentives have changed a great deal in the past decade.

Also be sure to do all your homework. "Your due diligence has to be exponentially more thorough when you're working internationally than domestically," Stoffel notes.

compensation challenges, and the local wage environment. "We receive firsthand knowledge from executives who have been doing business in the region for several years," says Forsythe. "This yields valuable information about the area."

Tax laws might help to influence the decision, as well. "States that are hurting for revenue may develop creative ways to tax goods stored in your warehouse," says Hansen. "When selecting a new location, you have to take local policies, taxes, and regulations into consideration."

Down to Details

Once a company pares its list of communities to a few strong candidates, it is time to issue requests for proposals (RFPs), conduct site visits, talk with local economic development officials, and negotiate with property owners.

This is the point in the search when features of specific sites, along with precise locations on the map, can make a big difference. "If you move 10 miles away from a spot that the modeling software has chosen, for example, you might be closer to a metro area that has the labor to support a distribution center employing 1,000 workers," says Forsythe.

On the other hand, you might rack up extra costs by choosing a location that is too far from the nearest interstate exit.

"For a company moving 9,000 shipments a year, an additional 18 miles in each direction at $1.75 a mile makes a difference of hundreds of thousands of dollars," Stoffel notes.

State and local officials who are courting new businesses tout available tax incentives, and those are certainly important. But shippers should not give too much weight to the prospect of tax breaks.

"Some companies begin a site search with incentives as their top priority," says Forsythe. But those incentives will eventually expire, leaving the company to cope with all of the location's other features, both positive and negative. "The wiser path is to ensure the quality of the property, community, workforce, and logistics environment," he adds.

Stoffel agrees. "You might get a nice incentive in year one for a particular location, but you're going to live with the supply chain costs for years to come," he notes.

Anyone conducting a site selection search should take an integrated approach. "No single factor determines the best site," says Thompson.

People in charge of many different functions within the company should take part in the decision. And they should work in an iterative fashion—not simply looking at transportation, then moving on to the next factor, but continually rounding back to review all the factors and weigh them together.

"You have to make site selection decisions holistically," Thompson says. "It's not about the real estate. It's about the business solution you're trying to achieve in the end." ■

SITE SELECTION

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[CASE STUDY]

SCHLUTER SYSTEMS HEADS WEST

When Schluter Systems decided to expand its distribution center (DC) network, it took a long-term approach. "We set out to define our five- to 10-year vision for a distribution network," says Brian Laundree, the company's logistics manager. "We used a four-DC network model to compile a list of sites."

Schluter Systems L.P. is the North American subsidiary of Schluter-Systems, based in Germany. The company manufactures systems for installing tile and natural stone, selling its products through distributors, authorized retailers, and big box home improvement stores.

Until 2011, Schluter Systems operated out of two facilities in North America—an office in Montreal, and an office and DC in Plattsburgh, N.Y. As the company considered expanding to four DCs, it decided the best first step would be to "flank" the continent, adding a facility in the West. With their sights on markets in Utah, Colorado, California, and Nevada, the team began its first round of legwork, which included contacting state and local agencies and real estate developers, and visiting various locations to collect information.

By siting a facility in Nevada, Schluter Systems can better serve its customers in the western United States.

As they conducted their investigations, Laundree and his team focused on a list of site criteria, which included proximity to the company's western North American customers; good logistics infrastructure, with suitable inbound and outbound transportation services; a qualified workforce; and low operating costs, including taxes. Access to a railhead was desirable, but a highway network offering quick delivery to customers was essential. Because the facility would include a training center where the company would offer workshops on using its products, it should also be near an airport. Finally, Schluter Systems wanted to build the new facility according to gold-level Leadership in Energy and Environmental Design (LEED) standards.

In late 2010, Schluter Systems chose a site in the Tahoe-Reno Industrial Center, east of Reno, Nev. Adjacent to Interstate 80, the Center was already home to large tenants such as Walmart and Petsmart. "A lot of infrastructure already existed, as well as great sites that would allow us to expand," Laundree explains. "Qualified contractors were on-site to work with us, and business incentives were available."

Schluter shipped its first order from the new 75,000-square-foot DC in July 2011. The site also includes a 22,500-square-foot office building, which contains a center for education and hands-on training. In addition to giving the company a sales and distribution presence in the western United States, the LEED-certified facility – incorporating many Schluter products – provides a way to highlight the environmental advantages of building with tile and stone.

Adding the new building to its network also helped Schluter Systems save money on transportation. "We're able to capitalize on full truckload deliveries across the United States, then break those into less-than-truckload and small parcel deliveries for the local western market," Laundree says.

In addition, the new DC gives the company more options for routing orders to customers. "That capability helped us be more agile and flexible," Laundree says.

Trimming Your Transportation Spend

Transportation costs run high, but cutting your spend might be more feasible than you think.

by Lisa Terry

Transportation spending is a perennial target of budget-cutting exercises, and a large, multi-faceted cost center for many companies; some may spend three to six percent of their materials costs on transportation. Seizing control of freight spend can improve operating income by five to 10 percent, and boost stock prices by 10 to 20 percent, according to an Accenture study, *From a Shipper's Market to a Carrier's Market.*

Improving the ability to analyze and automate true freight spend is a priority for almost half of respondents to *Transportation Procure-to-Pay: Spend Management Trends Under Globalization*, a February 2012 Aberdeen Group survey.

Cutting costs is not always easy, but because transportation spending comprises several dimensions, many opportunities are available to control that spend. Leveraging IT, reconsidering warehouse processes, and conducting periodic network optimization projects are just three of many strategies that enable shippers to not only trim costs, but ensure that transportation spending supports overall business goals.

Leveraging IT

Transportation costs are not only rising, they're also elusive.

"One of the most difficult questions for companies to answer is, 'how much do you spend on transportation?'" says Jason Cook, a managing director at Accenture, a global management consulting company. Many shippers can identify transportation costs associated with a specific product flow, business unit, or set of contracts, but many hidden costs make an enterprise-wide total difficult to ascertain.

The bundling of production and transportation costs into vendor contracts is one reason behind this difficulty. In the communications, media, and high-tech industries, for example, it's common for original equipment manufacturers (OEMs) to price goods on a cost-plus basis, with incentives to expedite hot products, such as the latest smartphone. This makes it hard for buyers to maintain visibility and control the transportation portion of a contract, and often requires revisiting contract terms and analyzing which party is best positioned to cost-effectively manage transportation.

With freight costs rising, the task of teasing out hidden costs is becoming increasingly critical. "Deconstructing the supply chain to isolate transportation costs is where the opportunity lies," Cook says.

He recommends a cohesive, step-by-step strategy to gain control of transportation spending, starting with the basics and layering on additional capabilities that enable shippers to reap the greatest benefits from that foundation. Those steps include:

- **Isolate transportation costs.** Assess the current state of your company's freight management. Identify the who, how, and why of all existing transportation choices, and consider all the internal and external assets currently in use.

Work with upstream suppliers to analyze their supply chain—including shipping costs, modes and mode-shifting opportunities, and order frequency—and how it affects your business. Unbundle those contracts to shed some light on the transportation portion—then start to manage it.

- **Migrate to centralized transportation management.** Product lines, business units, or geographies often manage transportation, but pulling transportation management into a single, shared service opens up a host of savings opportunities. "Some synergies can be 10 to 30 percent of spend," says Cook.

These synergies include consolidating carriers, rationalizing service agreements, and deploying internal distribution and transportation assets more efficiently by rebalancing distribution, rerouting, and using augmented line hauls, backhaul, and continuous moves.

These two steps can reap a considerable return on investment. "These strategies establish quick wins, driving tangible and short-term savings that enable shippers to capture value in three to six months," says Cook.

- **Invest in technology.** Once visibility and a control infrastructure are in place, shippers need technology support to maximize the benefits. Important enabling functions include the ability to look at order activity and volumes, aggregate capacity needs, plan and tender loads to carriers, and manage order requirements in real time. These functions must integrate easily into current logistics, invoicing, and procurement processes.

Transportation management systems (TMS) can typically handle many of these functions, but Cook argues that maximum transport spending control requires not only TMS, but execution systems. "Visibility and planning only take you so far," he says.

Shippers who put technology to use for visibility, planning and tendering loads, and managing order requirements optimize transportation spend.

Another requirement is to ensure sufficient customer service levels when the TMS directs the shipper to the lowest-cost carrier for a particular route. "Shippers need tracing capabilities, such as order tracking, real-time visibility to shipment status, exception management, and compliance so they can manage across multiple carriers," says Cook. Such capabilities are commonly part of enterprise resource planning systems, not TMS.

Finally, shippers need routing, scheduling, and network modeling, which are incorporated into some—but not all—TMS.

The savings opportunities from this third step are considerable—as much as 30 percent of the cost—particularly for freight that shippers didn't previously manage.

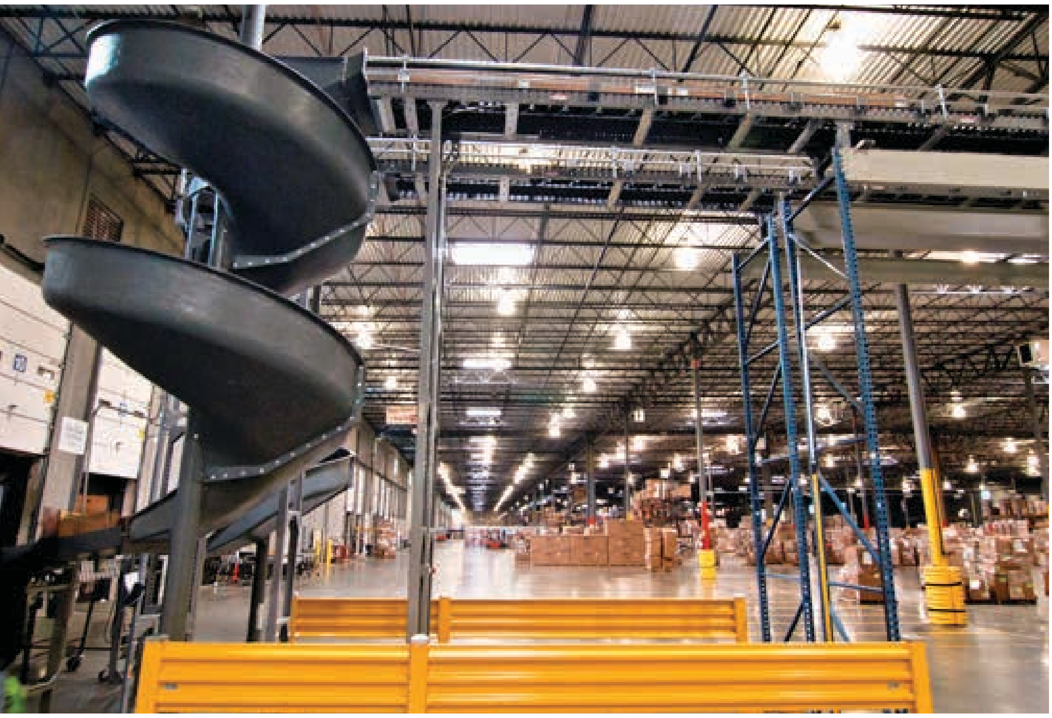
These three steps represent a development curve for transportation spend management because only a small number of shippers currently have access to these capabilities. "Transportation spend management is an emerging capability, and the market has not yet reached a level of maturity to consistently execute these steps," he says.

Reconsider Warehouse Processes

Many shipment details that happen in the warehouse—how it's packed and loaded, what other orders it's packed and loaded with—significantly impact the cost of getting it to its destination. Whether the freight is a full truckload, less-than-truckload shipment, or a single parcel, distribution staff can take a number of steps to contain the ultimate cost of moving an order.

"Some retailers drive improvements simply by loading better," notes Dan Avila, a partner at Tompkins International, a supply chain consultancy in Raleigh, N.C., that helps e-commerce companies and retailers optimize their distribution networks and trim transportation costs through more efficient warehouse processes. "For example, techniques that reduce a slightly-more-than-truckload shipment to one full truckload can reap 25-percent savings."

Efficient warehouse processes, equipment, technology, and strategies optimize freight flow and help to save on transport costs.



Shippers are thinking outside the pallet when loading by using strategies such as floor loading, in which they maximize capacity by hand-packing cartons to the ceiling instead of palletizing them. Using conveyors into trucks, and load stands to reach the top of the trailers, can make floor loading safer and easier. While hand-loading can drive up labor costs, they may be offset by the more efficient use of space or making the load a better fit for the delivery point, such as a retail store loading dock that lacks multiple bays.

One approach to floor loading is brick loading—packing shipments left to right, to the ceiling, and locking them in place. Multi-stop deliveries can be separated by load bars or plastic sheeting, and loaded in reverse order for a multi-stop, full truckload run. Brick loading is common in the parcel industry and has spread to other applications.

Load planning software, integrated with warehouse management systems, can help shippers better allocate freight to trailers based on load sizes and routes.

E-commerce shippers are increasingly using the carton cubing functionality in their warehouse management systems to reduce dunnage. Carton cubing also helps reduce errors when selecting package size.

Consolidating orders is another important step. It is common for each item in an e-commerce order to ship separately, but "with time and processes in place, they can move in the same carton, reducing transportation costs," Avila says.

Another e-commerce trend is the use of single machines to accommodate the large number of single-item orders. Single machines create an envelope or corrugate material around an item, eliminating dunnage and enabling some items to ship via the U.S. Postal Service, which many e-commerce retailers consider more economical for the smallest shipments.

Of course, adopting these methods requires investment in new software, equipment, and processes.

E-commerce customers have a low tolerance for shipping fees and, conversely, a high expectation for speed. As a result, "e-commerce retailers are getting creative in cutting transit time when they're not close to the customer," says Avila.

That has driven an increase in zone skipping: Sorting small packages by destination, with splits for

a parcel carrier's hub, then hiring a line-haul carrier to move full truckloads to a less costly zone closer to the end customer.

"E-tailers turn two shipping days into one by taking packages to a UPS hub and dropping them into a lower-priced zone. It saves money and time," says Avila.

Optimize Supply Chain Networks

"Companies tend to look at transportation processes in one of two ways," says Richard Patenaude, director of client integration and development for The Wheels Group, a non-asset-based third-party logistics provider headquartered in Mississauga, Ontario. "One is strictly as a procurement function: they issue an RFP, choose the lowest-cost provider, and they're done. The other is to view transportation as a strategic, managed process where inputs and outputs are measured beyond freight rates."

The second approach is where the opportunities lie to maximize the value of transportation spending, ensuring an optimal match between business requirements and supply chain network design.

That optimal match is driven by variables—businesses generate new product lines, customer demand patterns shift, sourcing locations change, fuel prices fluctuate. A change in any one variable can have a greater impact on the network model than many realize. Individual differences in businesses mean there's no one right answer to how often shippers should revisit their network models, but those that time it right stand to make the most effective use of their transportation spend.

Businesses that time a supply chain network redesign right make the most effective use of transportation spend.

At Wheels Group, Patenaude and his colleagues deliver network optimization services primarily to multi-national consumer packaged goods companies active in the Canadian and U.S. markets. Given Canada's smaller population, geographical challenges, and general shipment volumes, most freight moves via LTL rather than the full truckloads common in the United States. But the needs are the same: ensuring networks are as efficient as possible.

In the network optimization process, a shipper seeks to rationalize the complete array of production, distribution, and transportation services; locations; costs; and service levels within the network. For a food company, for example, that might mean looking at the entire farm-to-table process, or just a portion of it. Shippers can realize 10 to 20 percent in cost reductions through structural change to transportation locations and services alone, according to an Aberdeen Group report.

Depending on scope, network optimization projects can last anywhere from six weeks to four months, or longer. Network optimization comprises two basic steps: defining the base case, then using modeling software to run what-if scenarios with different network models. Attaining the best outcome requires incorporating the following practices:

- **Set a clear goal.** Ensuring clear objectives and deliverables is key. Network optimization projects are ripe for scope creep: if you're considering whether to shift production, why not reconsider product design and materials?

"Companies need a clear mandate for what they're trying to achieve," Patenaude says. It might be where to manufacture a new product, or validate the potential impact of a merger or acquisition, or adjust to the impact of a recent growth spurt. But the end goal must be clear.

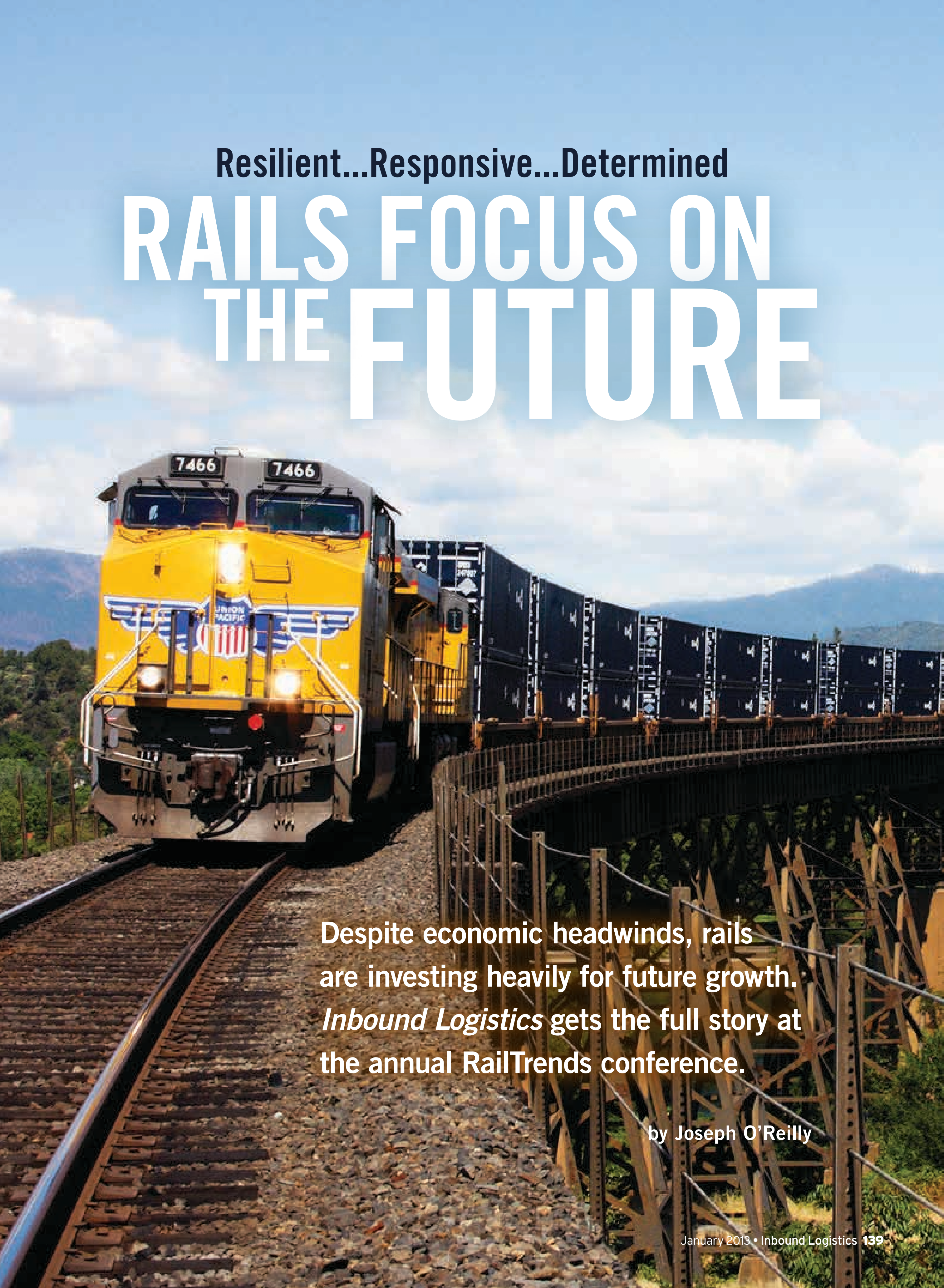
- **Validate the data.** Wheels Group spends about 90 percent of a network optimization project side by side with the shipper, gathering and validating the assumptions and constraints that define the network's current state. Just 10 percent of the time is actually spent running potential models, because they are only as good as the data supporting them. Documenting supply chain business processes and data flows as they evolve can help shorten the work on subsequent network optimization projects.

- **Allocate sufficient resources.** "Network optimization projects are very detailed, and could be an intensive process as companies build models around different business constraints," says Patenaude. "Companies must be able to understand the current business to compare it to a potential new model." Members of the project team must have both the time and business knowledge required.

- **Look holistically.** Companies that get too focused on the details could miss the larger implications. For instance, defining a source point based on freight rates between two different distribution centers (DCs) for a specific customer location may be short-sighted if the cost of delivering from plant to DC isn't considered as part of the total cost comparison. An optimal network balances cost with factors such as service levels that support overall business goals.

- **Ensure expertise.** Tier-one companies often have the internal expertise and tools to conduct their own network optimization projects. Others turn to pure-play supply chain consultants or third-party logistics providers. Any partner "must have the tools, resources, and expertise to perform network optimization effectively," says Patenaude.

While all these practices are important, data cleanliness and accuracy is the most critical. "How available is the data? How constant? How useful is it to the supply chain today? Is there consistent information flow? It's all about the data," Patenaude says. Ensuring a company has the right stakeholders internally to consume, review, and implement the results is also key. ■



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RAILS FOCUS ON THE FUTURE

Despite economic headwinds, rails are investing heavily for future growth. *Inbound Logistics* gets the full story at the annual RailTrends conference.

by Joseph O'Reilly

The U.S. railroad is nothing if not resilient. That's to be expected for a transport mode that spans three centuries and remains as relevant now as ever.

It was that relevancy, along with resolution and optimism, that was displayed in full force during the annual RailTrends conference in New York City in December 2012. *Inbound Logistics* attended the two-day meeting, which was sponsored by *Progressive Railroading* magazine, and hosted by Tony Hatch, president, ABH Consulting, and featured an audience of rail carrier and supplier executives.

Ed Hamberger, president and CEO of the Association of American Railroads (AAR), summarized the industry's position in his opening comments, stating that not enough leaders in Washington understand that freight railroads are privately owned and privately maintained, and that $500 million in private-sector money has gone into this freight system since 1980.

"While the federal government has been borrowing 40 cents of every dollar it spends, AAR's members have been spending 40 cents of every dollar they earn putting it back into the network," Hamberger said.

With headstrong defiance comes a protectionist impulse — both traits have served the railroad well, but have also inured criticisms against it. Carrier-shipper antipathy was equally palpable at the conference, and without significant shipper representation — apart from National Industrial Transportation League (NITL) President and CEO Bruce Carlton — sentiment clearly skewed toward rail interests.

Outside the industry, divisiveness also exists between freight and passenger interests, especially when it comes to government spending. But RailTrends attendees presented a unified front.

Amtrak CEO Joseph Boardman was bullish in his assessment of the rail industry and economy at large, noting "this country needs to start thinking about growth rather than survival."

And while Amtrak has always been an odd duck — it depends on Congress for funding and isn't a private industry, except when it gets turned down by states for FEMA assistance, according to Boardman — it provides the freight railroads with an operational barometer and competitive push when necessary.

Intermodal transportation combines rail's long-haul economy with trucking's short-turn responsiveness to deliver efficiency and cost savings.

Despite debate over funding and regulation, the railroad is an undeniable force that is rounding a mountain of political and economic discontent as it heads into a new growth curve. It serves as an example of private-sector ambition, and a model for transportation investment and planning — impulses that are sorely lacking in Washington.

Moving into 2013, a number of challenges and opportunities await the railroad industry — developments that will similarly frame how well the United States rebounds from recession to recovery, and eventually growth.

TWO LEVERS AND FOUR HEADWINDS

Railroads have endured criticism over the past few decades that they were late to the game in meeting customer service requirements. But that sentiment is changing. Rising yields and scheduled railroading — the latter a consequence of Class I railway Canadian National's pioneering approach — are the two primary levers driving value and cash flow within the industry, according to Jeff Ward, partner and vice president of consulting firm A.T. Kearney.

"The U.S. rail system is the envy of the world," he said, while also cautioning against government intervention that may threaten to tip the status quo.

New regulatory developments are among the four headwinds Ward cited, along with rising commodity costs, shifts in traffic mix, and supplier market change — the latter being a major factor in how railroads manage their own supply chains.

The decline in coal and the emergence of natural gas, shale oil, and containerized intermodal freight are impacting rail traffic patterns. Domestic intermodal growth in new corridors with less density is placing more pressure on traditional lanes.

Another factor is increasing global competition for railroad equipment supply as new projects in Africa and the Middle East create higher materials costs throughout the industry. "The question remains whether the railroads' procurement functions are capable of addressing these headwinds," said Ward.

"Most of the dollars we spend in the industry go outside the organization, whether it's fuel, capital projects, or equipment," he added.

Railroad procurement is an important function within the industry as it confronts rising operational costs and seeks greater efficiency levels.

SWITCHING TACTICS

On the flipside, there is no discounting the outward investments railroads have made over the past 30 years in equipment, track, and facilities. Hamberger labeled the railroad's current form as a "renaissance," and credited private investment following

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> "When the economy starts to pick up, we'll be in trouble if we aren't focused on our supply chain infrastructure and building out for the future." –Michael Bourque, president and CEO, Railway Association of Canada

the Staggers Act and de-regulation as the primary influence behind this resurgence.

"It wasn't so long ago that freight rail service was an oxymoron," he noted. "Not anymore. UPS is our single largest customer, and variations in delivery time are getting much smaller. We're providing more consistent service. That is why we are continuing to grow market share."

The railroads have certainly won business — leading some captive rail shippers to feel Class I's have shunned their constituency in favor of more lucrative growth opportunities.

As an example, Michael Bourque, president and CEO of the Railway Association of Canada, described an ongoing dispute with shippers who are lobbying the Canadian government to introduce legislation that would guarantee shippers service contracts.

"Oil producers like the fact that they don't have to enter into a contract," Bourque said. "They get to use the rail network and share the cost."

Hamberger addressed similar criticisms — notably from the fertilizer industry — that suggest some shippers are investing overseas because of high freight rail rates and bad freight rail service.

"Shippers were investing in places such as Doha, Quatar, and Oman, but not because they have better freight rail services than the United States," he said. "Maybe it's because that's where the natural gas is.

"In September 2012, two fertilizer company CEOs stated in their third-quarter earnings reports that they were re-investing back in the United States — that shale natural gas was a game changer," he continued. "One CEO predicted more investment centered in the United States over the next five years than ever before because of natural gas prices."

Hamberger believes a balanced regulatory system is critical to sustaining growth within the rail industry, which has seen productivity increase 173 percent and inflation-adjusted rates fall 50 percent since 1980, when 25 percent of the industry was beset by bankruptcy.

A TOUCHY SUBJECT

Currently, the principal "jousting ground" between rail shippers and carriers is Surface Transportation Board (STB) proceedings regarding Ex Parte 711 legislation that seeks to adopt new rules governing reciprocal switching. Class I railroad CSX defines this practice as "the movement of a railcar, in switch service between the interchange tracks of one railroad to a customer's private or assigned siding on another railroad, for the purpose of loading or unloading freight. The service precedes or follows a road haul and is bi-directional to include both the loaded and empty railcar."

"In June 2011, we submitted a petition to STB to introduce a measure of head-to-head competition between Class I railroads in the United States," said NITL's Carlton. "This petition is built on discussions of competitive switching — the rights, privileges, and responsibilities."

NITL introduced the proposal in an effort to eliminate existing competitive access rules and precedents as they apply to reciprocal switching. The revised rule would require a Class I railroad to enter into a competitive switching arrangement whenever a shipper or group of shippers demonstrates that certain "objective operating conditions" exist, thereby providing more efficient, reliable, and cost-effective rail transportation, according to NITL.

Those extenuating conditions would be triggered if: the shipper's facility is served by one Class I carrier; there is a lack of effective inter- and intramodal competition; there is or can be a "working interchange" within a "reasonable distance" of the shipper's facility; and switching would not be unsafe, impractical, or hurt existing service.

"This is about competition, not about regulation or re-regulation," Carlton said. "NITL members do want a strong, profitable, well-functioning freight rail industry. They need it. They depend on it to move product in and out."

The STB has solicited additional comments from both shippers and carriers as to potential impacts on their respective operations. Hamberger similarly pledged that AAR would demonstrate impacts on not just freight rail revenues, but also on service and efficiency.

"To spot a car, take it after it's loaded, and bring it back into service on a single line move can be as few as six discrete moves of that car," Hamberger stated. "With mandatory reciprocal switching, that can grow to 16, 18, or 20 moves. Each move is an opportunity for something to go wrong — each one takes time, equipment, and personnel, and clogs up yards.

"We believe there will be an adverse impact from 711 not only on revenues, but also on operations," he said.

NATURAL GAS EXPLOSION?

While many railroaders are wary that Washington's regulatory overreach threatens to disturb a finite balance within the industry, shifting commodity trends are doing much the same — signaling a new wave in U.S. rail development that, in time, will likely benefit all users.

"Natural gas is at historically low prices, causing a tremendous ripple effect through the energy and energy consumption industries," said Carlton. "It has a displacement effect in freight rail, hitting the coal industry significantly. Where we go from here, whether there will be natural gas exports or not, will impact pricing. It could move the freight rail industry in one direction or another in the short term."

The coal industry is on a precipitous downward trend, largely because of the economy, increasing environmental regulation, and energy competition. In its stead, natural gas — and the materials necessary for extraction, such as frac sand — and crude oil have become a bonanza for railroads.

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"Coal now accounts for only 35 percent of U.S. electricity generation, down considerably from 50 percent not too long ago," said Toby Kolstad, president of Rail Theory Forecasts, a rail freight traffic and equipment consulting firm. "Natural gas use is almost even with coal. The two will probably switch places in the next few years."

While North American demand for coal is ebbing, emerging export markets are opening, setting the table for more outward growth.

Carlton cited the Cove Point LNG Terminal in southern Maryland as one example of this changing paradigm. The offshore processing facility, which was built as part of a long-term contract for natural gas exports out of Algeria, never materialized and was eventually shuttered.

"We forgot the Algerians had their hands on the valve, and could shut off the gas," explained Carlton.

A few years ago, Cove Point re-opened for imports. Now the LNG terminals may be converted for liquefaction and export.

Canada is experiencing similar change. The country has an abundance of natural resources — wood, potash, minerals, grain, crude oil — and the developing world wants them.

Canadian National has been a welcome beneficiary. Thirty-one percent of its business is related to global trade, according to Jean-Jacques Ruest, executive vice president and chief marketing officer at CN.

He believes the rise of natural gas and related commodities is forcing the industry to react. "One benefit of the North American energy renaissance is that it is teaching railroads to be nimble and fast," Ruest said.

Case in point: Union Pacific's (UP) West Texas origin and destination business flourished due to the oil boom. Initially, UP didn't have capacity to meet demand, and there were operational constraints, explained Joe Santamaria, vice president of engineering, UP. The railroad set up a just-in-time operation to serve the region, rebuilding yards, increasing leads, doubling capacity, and expanding throughput.

In the long term, many believe new energy will more than offset the loss of coal business — and there is a silver lining. Major industrial growth opportunities exist where companies are looking to locate manufacturing activity proximate to energy supply, said Patrick Ottensmeyer, executive vice president and chief marketing officer at Kansas City Southern Railway.

And while the U.S. and Canadian markets for natural gas are just beginning to develop, Mexico remains untapped, providing further incentive for the new government there to engage reform and bring in foreign capital to begin exploration.

If the first rail renaissance is defined by customer service improvements and intermodal traction, the second resurgence will feature intermodal volume growth and a manufacturing rebound, stated Donald Broughton, chief market strategist for investment banking company Avondale Partners.

Canada's wealth of natural resources creates shipper demand for cost-effective rail transportation. Canadian National is among the rail carriers serving this market.

AN INTERMODAL AWAKENING

Rail/intermodal is becoming a bigger part of the conversation among North American transportation circles. Mixing and matching rail's long-haul economy with trucking's short-turn responsiveness is a natural synergy. But it has always been an awkward proposition for a railroad industry perceived as self-reliant and inwardly focused. Intermodal not only forces shippers and consignees to step beyond the comfort zone, but industry as well.

The international play has been a relatively easy quarry for railroads. Rail/intermodal at U.S. ports helps alleviate congestion and speed throughput. The domestic front, however, presents a more dynamic challenge.

While Kolstad was previously optimistic that rail intermodal volumes appeared to be growing faster than imported containers — suggesting domestic intermodal traction — he's no longer certain that's the case. "Although I see a lot of J.B. Hunt and Schneider containers on the highway, I don't know yet if we are containerizing U.S. traffic as much as we thought," he said.

Demand for intermodal railway equipment is down as the market absorbs what already exists — although Kolstad expects that trend to reverse itself sooner rather than later. And as the economy recovers and volumes return to normal, capacity constraints will again raise the efficacy of rail/intermodal solutions and equipment demand.

Intermodal is still a foreign concept for many outside the industry. "The story of intermodal and containerization is not well-known," Bourque says. "We need to do a better job of explaining how it works and the opportunities that exist."

One example in Canada is the development of intermodal export opportunities at British Columbia's Port Prince Rupert. While the port has always had strong inbound flows from China, it has doubled its exports to $5 billion since 2009. A lot of


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that volume is focused on forestry product moving in containers out of Prince Rupert.

Closer to home, the lead intermodal story features Florida East Coast (FEC) Railway's continuing growth in the Southeast region. Jim Hertwig, president and CEO of the 351-mile railroad, was quick to deflect any shortline stereotypes. "We're an extension of two Class I's," he said. "We run trains."

The railroad is gaining new interest, largely due to the Panama Canal re-opening. The South Florida market is a traditional dead-head zone, with four trucks moving in for every one heading out. Carriers don't like to go there, so FEC has captured share and interest from shippers that can run containers via rail into the market from Jacksonville.

Seventy-five percent of FEC's business is intermodal volume, 60 percent of which comes from Norfolk Southern and CSX. The railroad recently opened an intermodal facility in Cocoa Beach, where Walmart is a big customer. And its relay services from Nashville, Memphis, Charlotte, and Atlanta provide truck-competitive service into the Florida market.

FEC has effectively created a regional intermodal bridge between the rail and truck industries. Many see it as a new direction for transportation in the United States — one that can economically and efficiently absorb new freight flows and help alleviate capacity constraints.

THE RAILROAD'S SUPPLY CHAIN PLAY

An underlying theme during the RailTrends event was the railroad's positioning in the broader supply chain. The industry faces its own fresh concerns with regards to material costs and supply management as global demand for equipment amplifies.

But the railroad's "renaissance" — a phrase used often during the conference — is now forcing carriers to consider their interplay in a much broader supply chain framework.

The issue is why Hertwig's presentation about the efficacy of short-haul intermodal resonated so well among audience members. It's also why CN is addressing a unique need in the Detroit market to create a single-lane service from Prince Rupert and Vancouver through Chicago so automotive shipments don't get hung up at interchanges.

"Automakers aren't interested in buying a rail service — they want a supply chain solution that stretches from Asia to Detroit," said Ruest.

A number of transportation and logistics pundits and policy makers have pegged intermodal as an anchor for establishing a much-needed freight transportation policy in the United States. The infrastructure exists, and railroads have become more efficient and timely. Additionally, the mainstream potential of natural gas — and the railroad's role in bringing this to reality — adds a vital energy component to transportation planning discussions.

"The growth of rail is phenomenal. In some parts of our supply chain, we are already at capacity," said Bourque. "We're still in a recession and growth is flat. When the economy starts to pick up, which it will, we're going to be in trouble if we aren't focused on our supply chain infrastructure and building out for the future." ■

A READER PROFILE REUNION

WHERE ARE THEY NOW?

BETH FORD
Class of 2009

BRENT SHINALL
Class of 2007

BETHANY ADAMONIS
Class of 2007

Inbound Logistics gets back in touch with former Reader Profile subjects who have since moved on to new challenges. All of them are most likely to succeed.

By Merrill Douglas

Beth Ford

FROM FLAVORS AND FRAGRANCES TO FEED, SEED, AND BUTTER

Profiled July 2009
Executive vice president, head of supply chain, International Flavors and Fragrances, New York

Since 2012
Executive vice president, chief supply chain officer and chief operations officer, Land O'Lakes, St. Paul, Minn.

Back in 2009, Beth Ford was busy at International Flavors and Fragrances (IFF), re-engineering its global supply chain to help the company continue to grow as efficiently and effectively as possible. During Ford's years at IFF, the company consolidated its European operations into an expanded facility in Amsterdam, established new operations in China and Singapore, enlarged a facility in India, and made plans to do the same for a manufacturing plant in Istanbul.

"I'm proud of that time because the support we received from the business and the board for major investments positioned IFF for 15 more years of efficient, global growth," says Ford.

Enhancing infrastructure is also a top priority for Ford in her latest position as executive vice president, chief supply chain officer and chief operations officer at Land O'Lakes. The second-largest agricultural cooperative in the United States, Land O'Lakes is well-known for its dairy products, but the Fortune 500 firm is also a leading producer of animal feed, seed, and crop protection products.

Ford is responsible for every aspect of the Land O'Lakes supply chain. When she joined the company in January 2012, one of her first projects was examining the company's global facilities to see how well that network matched Land O'Lakes' plans for the future. Her team evaluated whether the infrastructure was in shape to capture growth effectively, and how well capital strategy and growth strategy were aligned.

Although the feed, seed, and crop protection businesses account for two-thirds of Land O'Lakes' revenues, the dairy business grabbed much of Ford's attention throughout 2012. The first challenge arose when early 2012 turned into a boom production period for dairy, and the U.S. co-op members' cows were giving all the milk that Land O'Lakes could handle.

Land O'Lakes had to deal with this excess creatively. "Unlike other businesses, I couldn't cancel or refuse delivery of inbound supplies," Ford says. That wouldn't have met the needs of co-op members who needed to sell their product.

Later in 2012, the worst drought in 25 years hit much of the United States, destroying crops and pushing up the price of feed for dairy farms. "We then had the opposite situation, where milk production was much lower," Ford says.

Land O'Lakes prepares for such market swings by coordinating the work of its procurement, merchandising, risk management, and other teams to reduce financial risk. When milk production rises, the company might divert more of the supply to its cheese manufacturing facilities, converting the commodity to a product it can store for future use. Land O'Lakes also

Shortly after landing at Land O'Lakes, Ford had to deal first with a boom in dairy production, then with a devastating drought.

nurtures relationships with large customers, such as major chocolate manufacturers. "When we have a surplus, we may check with key partners about their capability to help take some of that volume," Ford says.

Ford finds both aspects of Land O'Lakes' business—dairy production and agricultural "inputs"—compelling. "The food production imperative fits right in the middle of geopolitical events around the world," she says. She enjoys her complex job and the values that permeate a company that has been owned by farmers since 1921.

"And, who would have guessed that I'd move from New York to Minnesota for better weather?" she adds.

Brent Shinall

HE KNOWS THE DRILL

Profiled March 2007
Vice president, global supply chain, Helix Energy Solutions, Houston

Since 2010
Vice president, supply chain management, Rowan Companies, Houston

When *Inbound Logistics* profiled Brent Shinall in 2007, he was building a corporate-wide supply chain for Helix Energy Solutions, a Houston-based builder of subsea infrastructure for energy companies. His current employer, Rowan Companies, also provides contract services for energy extraction. But Rowan's specialty is drilling.

In 2013, Rowan plans to complement its fleet of 31 shallow-water rigs with four ultra-deepwater ships that will allow the company to drill into seabeds 12,000 feet underwater. "We'll have the most capable ships in the world," says Shinall. Those ships will add a new layer of complexity to Rowan's supply chain.

As vice president of supply chain management, Shinall is responsible for all the inventory on Rowan's drilling rigs and in its warehouses in Scotland, Malaysia, Indonesia, Norway, Egypt, Saudi Arabia, and Houston. "The inventory includes all consumables, chemicals, spare parts for all the equipment, and the equipment itself," he says.

> Shinall is charged with managing inventory for a global fleet of drilling rigs.

Shinall's highest priority since joining Rowan has been to implement an inventory management system for the entire fleet, based on the SAP enterprise resource planning (ERP) platform. He expects to complete that effort in early 2013, but the new system is already making a big difference.

"Before we had an inventory system, the rigs would just buy, buy, buy," Shinall says. Rig managers did their best to determine what parts each facility needed, but didn't know in detail what they had in stock or where it was stored.

"Now we work with our maintenance and engineering departments to determine the critical spares each rig should hold, and we set minimum/maximum levels," Shinall says. When stock falls below the minimum, the system automatically sends a buyer a requisition.

Shinall has also spent time preparing the way for Rowan's newest facilities in Malaysia, Indonesia, Norway, and Egypt. "We try to buy everything we can locally, so we don't have to ship it," he says. "My group goes boots on the ground in the country, finds all our major suppliers, then builds the logistics network."

Rowan works with three freight forwarders to consolidate shipments from suppliers, then move that product to its warehouses. From the local facility, Rowan moves the goods to a dock near its drilling rig, then the client—the energy company—takes the shipment to the rig on one of its supply vessels.

Transporting supplies to the deepwater ships will be a tougher challenge, because such ships are deployed all over the world. "Usually it's near a country with insufficient infrastructure, such as Angola or another part of Africa," Shinall says. "Part of my job will be ensuring we set up the logistics and infrastructure to move goods from our suppliers to our warehouses and docks, then out to the vessels." The deepwater ships also have complex equipment—and much more of it—than the shallow-water rigs.

To prepare for deployment, Shinall and his team created a "virtual warehouse" about one hour from the site in South Korea where the ships are under construction. "We're going to mock up this warehouse as though it were a storeroom on the ship, with all the exact locations, labeling, and shelving," he says. "Then we're going to build our inventory as the ship is being built." At the same time, they'll move the corresponding data into the SAP system.

"When the ship is ready to go, we'll load all that inventory from the virtual warehouse onto the vessel," Shinall says. "From day one, the ship has the accurate inventory, and off it goes."

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Bethany Adamonis

PLANNING THE NEXT STEP

Profiled December 2007
Undergraduate supply chain major, Penn State University

2008-2010
Supply chain planner, BASF, Florham Park, N.J.

2009-2012
Graduate student, MBA, global business and supply chain, Rutgers University, Newark, N.J.

Since 2010
Various projects, BASF, Florham Park, N.J.

After completing a co-op program at Unilever, Bethany Adamonis was finishing an undergraduate degree in supply chain management at Penn State when *Inbound Logistics* profiled her in late 2007. Unilever had offered her a full-time job as a supply chain planner after graduation. But the chance to work on a series of supply chain projects prompted Adamonis to instead accept a job at the Florham Park, N.J., office of German chemical company BASF.

"I thought it would be a better experience to work cross-functionally than in a dedicated supply chain role," she says.

Her first scheduled project at BASF sprang from the company's plan to acquire another chemical firm, Cognis Holding. But when the financial crash of late 2008 interrupted that deal, Adamonis found herself working as a planner after all.

The job involved managing BASF's supply chain of aroma chemicals, which were made in Germany, then shipped to the United States, Canada, and Mexico. Adamonis was responsible for forecasts, budgeting, and inventory levels, as well as working closely with key customers.

In 2010, Adamonis was assigned to a cross-functional project that involved moving all BASF locations globally onto a single version of SAP's enterprise resource planning (ERP) system.

Doing project work for BASF while earning an MBA keeps Adamonis more than busy.

When BASF finally bought Cognis in December 2010, Adamonis was tapped to help integrate that company into the larger organization and move it to BASF's SAP platform. "I managed the purchase-to-pay work stream for the integration effort," she says.

Cognis sold natural chemicals to many of the same large accounts that bought synthetic chemicals from BASF. After the purchase, when BASF started selling both kinds of product, Adamonis ensured key accounts in North America suffered no interruptions during the ERP integration. "I also made sure they understood the transition plan and legal entity changes," she says.

Finishing that work in 2011, Adamonis turned her attention to a Cognis manufacturing plant in Mexico. Her job was to help bring processes and business rules at that facility in line with BASF's standard practices for North America. "That involved everything from efficient order quantities to lead times to research and development," she says.

Currently, Adamonis is the global manager for a project involving key BASF accounts. "We are connecting both of our SAP systems globally, so all processes – from order placement to invoicing – will be seamless," she says. "We are wrapping up our implementation plan in North America, and in February 2013 I'll pick up the European implementation."

The years since college have introduced Adamonis to some unexpected challenges. For example, she finds meeting deadlines can be tough when many people are collectively responsible for a project's success. Another challenge is understanding the upstream and downstream impacts of decisions made within a project.

As if these issues weren't enough to keep Adamonis busy, she has also been earning an MBA in global business strategy and supply chain at Rutgers University. "I have no social life," she notes. "I'm looking forward to taking a deep breath and spending more time enjoying New York City."

She's also looking forward to her next move. She may take an opportunity to work for BASF in Germany, or pursue a new role at the company in procurement or the corporate supply chain organization.

"I'm at a crossroads, trying to choose my next step," she says.


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LOGISTICS LEADERSHIP

Secrets to Success

Ready to elevate your logistics career to the next level? Here are the skills and knowledge you need to take you to the top.

by Justine Brown

Strong leaders are important to any business function, but logistics management demands unique leadership capabilities. Because logistics represents a large investment for most companies, a strong leader must develop innovative solutions, and optimize logistics and supply chain strategy and operations to gain competitive advantage.

"The unique challenges of logistics and supply chain management make having the right leader a critical part of achieving results," says Don Firth, president of JobsInLogistics.com Inc., a career and recruiting company specializing in logistics, manufacturing, and transportation.

"Part of the reason is that logistics covers a broad area. Good leaders must be able to address executives at a boardroom level just as well as they talk to truck drivers and warehouse workers," Firth notes. "They also need intimate knowledge of the entire supply chain, because logistics professionals work across functions within the organization, with business units throughout the company, and with partners across the supply chain."

Because logistics encompasses a wide scope and is a key profit center, the right leader can be a critical component to a company's success today. But it wasn't always that way.

"Ten years ago, many people didn't understand what supply chain was, even within their own companies," says Chuck Franzetta, a supply chain management consultant at Boalsburg, Pa.-based Franzetta and Associates. "Today, however, supply chain touches almost every aspect of a company, and affects many levels of an organization. Most companies now have a chief supply chain officer or an equivalent position who takes a seat at the boardroom table."

Learning to Lead

Successful supply chain leaders get involved with industry organizations and follow current events to help stay up to date on issues affecting the logistics sector.

"In the past, each company tended to operate as if it were an island," says Firth. "But to be successful today, managers have to look at the whole supply chain, and fine-tune the operation, secure better services, reduce costs, and make partnership agreements work to their company's advantage.

"I can't overemphasize the importance of listening," he adds. "Sometimes logistics departments operate in a silo, without collaborating with other departments. This can be a detriment to the supply chain and its effectiveness. Logistics professionals often confine themselves to focusing on peripheral logistics issues, and they don't see the upstream or downstream effects. To be successful, logistics leaders have to see the whole picture."

Grasping the supply chain's role in the organization can be challenging, even for experts. "Leaders have to recognize that logistics is part of a broader picture of supply chain management, and see how that relates to the company's bottom line," adds Franzetta. "Good leaders design and apply detailed processes for managing day-to-day activities – including the ability to react to contingencies — because things can and will go wrong."

Knowing the latest technology systems is also critical, because the entire industry has become more technology dependent. "Good leaders need to recognize that technology is key to supply chain efficiency," says Firth. "They have to know what technology is available, and how it can add value."

Having a broad vision, communicating well, anticipating future trends, and staying competitive are among the secrets to leadership success.

See the Big Picture

Achieving success in logistics requires two levels of skill, according to Andrew Goetz, who has been a professor at the University of Denver for 25 years and was part of the group that started the Intermodal Transportation Institute (ITI) in the 1990s. The first level includes basic skills or core competencies such as writing, communications, and quantitative analysis. The second level involves skills specific to the logistics sector.

For instance, the ITI program at the University of Denver, which awards a Master's of Science in Intermodal Transportation

"It is important for leaders to not only know their own company and industry, but also be familiar with other companies and industries, and how they all interact."

– **Andrew Goetz,** faculty member, Intermodal Transportation Institute, University of Denver

"Young leaders may be more comfortable texting than talking face-to-face, but listening and communicating are crucial to effective supply chain management."

– **Lora Cecere,** founder, Supply Chain Insights

Management, emphasizes educating students about the logistics sector's structure, and the variety of companies and industries involved.

"It is important for leaders to not only know their own company and industry, but also to be familiar with other companies and industries, and how they all interact," Goetz says.

The ITI program at the University of Denver emphasizes management, leadership and values, law and regulations, economics, finance, quantitative tools, freight systems, and global trade.

"Understanding industries around the world and how they operate is critical today. Twenty years ago, that was not the case," says Goetz. "Possessing a grasp of international laws, regulations, and policies improves how logistics professionals direct their companies globally."

The rapidly changing role of technology in supply chain operations represents another vital topic for logistics leaders. "The extent to which technology is now used in everyday logistics activities is amazing," Goetz observes. "It has revolutionized the industry."

Supply chain professionals who want to move into leadership positions should watch industry trends carefully to help anticipate changes that could affect their own company. Continuing education is another good way to develop this vision.

"Improving your educational profile is important," Goetz says. "Certificate programs and workshops can help you prepare for the future."

Goetz directs his students to focus on projects that would be of direct value to the company or agency for which they work. "Real-life problem-solving is a practical approach to developing experience," he says. "We encourage our students to apply their university knowledge to the problem; it moves them one step closer to becoming a good leader."

Stop Texting, Start Talking

Having a big-picture perspective is one vital component of logistics leadership. "Good logistics leaders need to be advanced in their thinking about supply chain visibility," says Lora Cecere, whose enterprise software blog, *Supply Chain Shaman*, focuses on using enterprise applications to drive supply chain excellence. "They should be able to think about the supply chain holistically."

Communication and math skills are also vital, although they represent areas of weakness among logistics leaders, according to a recent talent survey by Supply Chain Insights, the Baltimore, Md.-based research firm Cecere founded.

"Communication is difficult for many people, but it is so important to success," notes Cecere. "Young leaders, in particular, may be more comfortable texting than talking face-to-face. But listening and communicating are crucial to effective supply chain management."

It's also up to logistics leaders to keep supply chain operations visible within their companies, and ensure that logistics isn't treated as an isolated, behind-the-scenes function.

Keeping up with the sector's fast pace is also essential. "In the past, logistics systems moved slower, with fewer routes or need for customized services," Cecere says. "Today, data is more real time. Good leaders must be able to move quicker, too."

Stay One Step Ahead

There is a significant difference between leadership and management, according to Dave McClimon, who has led Con-way Freight Inc., Con-way Western Express, and Con-way Central Express during his 35 years in transportation and logistics, covering both private and public sector senior and executive level management and leadership positions.

"Many people are good managers, but not good leaders," he notes. "They get too involved in day-to-day issues, and don't look out far enough. Being a good leader means being able to see around the next corner."

McClimon views good leaders as people who can blend four key skills: they are able to plan, organize, motivate, and control. They also need to be very collaborative. "Supply chain touches every corner of a company," says McClimon. "Good leaders must be able to appreciate, understand, and collaborate with those areas.

"They also need to recognize the importance of having good talent on their team to help drive innovation and change," he adds. "Good leaders surround themselves with people who are strong in areas where the leader may be weak."

"Being a good leader means being able to see around the next corner."

– **Dave McClimon,** consultant, former Con-way president

Because companies now use supply chain management as a competitive advantage, "good leaders need ingenuity to differentiate their supply chain solution and make it optimally competitive," Finkbiner notes.

"For a long time, supply chain was simply an expense item," he says. "You control expense items, but you don't manage them. Companies such as Walmart have made supply chain operations a strategic element of their business, taking it from a practical application to a science."

The challenge is that the supply chain has grown and widened. Businesses have consolidated, creating more volume to manage, while globalization has created geographic issues.

"When a company moves from domestic to international distribution, the challenges multiply because it must deal with different laws, a variety of shipping modes, and multiple countries," Finkbiner says. "Managing international freight requires different sets of skills and experiences, and leaders need to be prepared.

"It's not just knowledge of geography that's important, but also understanding different transport modes, and how to optimize the supply chain by using the correct mode or combination of modes," he adds. "Globalization has changed logistics and supply chain management and, as a result, the qualifications required of leaders in the field." ■

Looking out for others in the organization is also important. For example, many new college graduates are smart but have no real-world experience. "Because the logistics sector is set for significant growth, and more jobs than it will be able to fill, we have to figure out how to help new graduates gain exposure," McClimon says. "Good leaders will find a way to mentor them, because giving back and helping position young employees for the future is crucial."

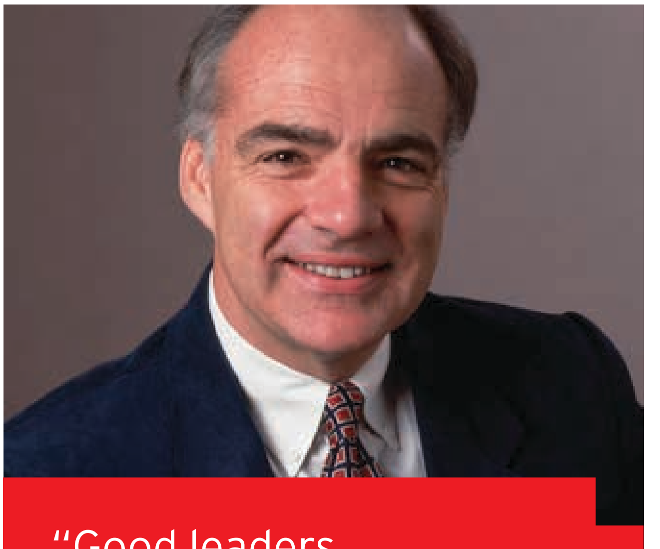
Staying attuned to what's happening in the marketplace is also a leadership skill. "Carve out time in your day to read newspapers and trade magazines," McClimon advises. "Attend industry conferences, expose yourself to new ideas, and see how other logistics professionals address challenges similar to yours. Good leaders cannot operate in a vacuum."

Finally, familiarity with analytics and technology is vital. "Supply chain management has become more analytical over the past decade," McClimon notes. "Also, technology is allowing much greater visibility within the supply chain. Today, we are all dealing with an overload of information. A good leader has to be able to analyze and draw meaning from all that data."

Get Competitive, Play to Win

During his 35 years in transportation and logistics, Tom Finkbiner has witnessed considerable shifts in the skills and experience required of supply chain professionals. "The logistics field has changed a lot in the past 20 years," says Finkbiner. "Experience used to be all you needed. Leaders would rise up in an organization through a series of blue collar jobs.

"Today, employees start at a level where they have decision-making capabilities and a real impact on a company's bottom line," he adds. "Education and a quantitative background are vital."



"Good leaders need ingenuity to differentiate their supply chain solution and make it optimally competitive."

– **Tom Finkbiner,** principal, Surface Intermodal Solutions, LLC, and senior chairman of the ITI board of directors

TRANSPORTATION ADVOCACY:

SHIPPERS STAND UP FOR THEIR RIGHTS

Dissatisfied with transportation policy coming out of Washington? Waiting for our national logistics strategy? With so much at stake, standing on the sidelines is not an option. Now's the time to get involved to drive real change. by Amy Roach Partridge

IN 2005, BILL JOHNSON, PRESIDENT OF WISCONSIN-BASED JOHNSON TIMBER Company, received some good news: Wisconsin passed legislation that boosted the state's gross vehicle weight limit for trucks transporting raw forest products to 98,000 pounds, as long as the vehicles have six or more axles. The bill, which made it through a Republican-controlled state Senate and was signed into law by Democratic Governor Jim Doyle, meant substantial cost reductions for Johnson's company, which transports two million tons of wood annually.

But the law wasn't merely good fortune for Johnson—he was integral in advocating for its passing. Johnson and his colleagues in Wisconsin's forest products industry convinced state representatives and senators of the need to increase gross vehicle weights. The change brought about increased efficiency and lower costs, as well as improved road safety, for forest products companies.

"By increasing the weight limit to 98,000 pounds and adding the sixth axle, we are now able to load another 10,000 to 12,000 pounds on our trucks, while keeping the same pound-per-square-inch on the road," Johnson explains.

Because of this capacity to haul larger loads, forest products companies have cut roughly 26,000 trips, and saved one million gallons of fuel annually, according to Great Lakes Timber Professional Association estimates. "Taking that many trips off the road improves safety, and reaps environmental benefits because we are using less fuel," Johnson says.

The law faced opposition from a national group called Coalition Against Bigger Trucks (CABT), but by meeting one-on-one with local government officials, Johnson's group had the opportunity to combat CABT's negative points. "The governor was quick to sign the bill, and it has benefitted the local forest products industry," Johnson says.

Speaking Out Reaps Results

Johnson's experience illustrates the important role advocacy plays in today's logistics and transportation environment. With ever-increasing gridlock in Washington, and a seemingly endless array of proposed legislation that stands to affect transportation in some way, industry leaders are finding a greater need to speak out and educate government officials on key supply chain issues.

"It is important to have a grasp on the legislation our elected officials are putting forth, and how those laws can hurt or harm our businesses," Johnson says. "Shippers should contact local elected officials and push for rules that will improve efficiency throughout the entire supply chain."

"Legislators are currently considering and implementing laws and regulations that many transportation experts fear will significantly erode productivity—particularly in trucking—and could increase the delivered cost of goods by up to 15 percent annually," adds Brian Everett, executive director of the National Shippers Strategic Transportation Council (NASSTRAC).

"It's important that transportation and supply chain executives remain educated on the 'what-ifs' of decisions coming out of Washington in order to adequately plan and execute their supply chain strategies," he says. "As they continue to educate themselves, they also need to educate legislators on the impact their decisions will have on supply chains nationwide."

For would-be industry champions who are uncertain where to begin their foray into advocacy, Everett recommends identifying the issues most important to their own operations, and quantifying the impact of those issues on their business.

"They then need to understand the legislative and regulatory process, and participate in it by establishing meaningful dialogue with elected officials on the issues," Everett says.

It's not only CEOs or business owners who should speak up. "Shipper advocacy should happen at all levels," Everett says. "Those responsible for transportation and supply chain management need to stay ahead of the game to proactively plan their strategies—and they need to remain nimble so they can react quickly when marketplace or advocacy issues shift."

For shippers, the need to advocate is often tied directly to the bottom line. With transportation and supply chains typically comprising a large portion of shipper budgets, legislation that impacts transportation costs can be particularly painful.

"If shippers don't help combat legislative issues, they are going to spend a lot more money for freight, which will raise costs for everyone," explains Gail Rutkowski, president of Chicago-based third-party logistics provider Wabash Worldwide Logistics. "It is important that shippers get involved. They can't sit on the sidelines and wait for someone else to do it for them."

Wisconsin's state legislature raised the weight limit for trucks transporting raw forest products, thanks in part to the advocacy efforts of Bill Johnson, president of Johnson Timber Company.

Cargo Moves Can End Up In Court

Legislation at both national and state levels can also impact shippers and transportation providers in a legal sense. Regulations and standards that may have been drafted with good intentions can end up introducing risk and cost into the supply chain because of a disconnect between lawmakers and the realities of business operations in this sector, says Andrew Spector, a partner at the law firm of Arnall Golden Gregory, based in Atlanta.

"Legislators don't take logistics functions into account when they draft laws," explains Spector, who is in charge of the firm's global logistics and transportation practice group.

The complexities of the logistics and transportation field can create confusion for lawmakers, who are usually not supply chain experts. Terms such as "warehouse distribution," "freight forwarder," and "carrier" have different meanings in different contexts, which can complicate legislation.

"Definitional nuances can cause legal problems," Spector explains. "A freight forwarder, for example, can be a company that merely coordinates a cargo movement, or it could undertake a carrier function, operating as a non-vessel-owning common carrier." Depending on the way a law is written, logistics providers and shippers may find themselves with legal obligations that should fall outside their realm of operation.

The California Air Resources Board (CARB), for instance, recently approved a series of amendments that require all transport refrigeration units to be tested and registered with CARB. Freight brokers—and even the shippers who hire the brokers—will be responsible for ensuring that any truck they hire to move refrigerated freight in California is compliant with this law.

While the environmental concerns behind the law are commendable, the realities of cargo transportation—where it is common for companies to subcontract trucks to move their freight—make compliance with the law onerous at best.

In other states, freight forwarders and shippers are "statutory employers"—responsible for ensuring their transportation providers cover their own drivers with workers' compensation insurance.

"If a trucking company that hires a driver or an independent contractor owner/operator doesn't have workers' compensation insurance, state regulations can say that the freight forwarder is the statutory employer, and is responsible to provide workers' compensation coverage to the drivers," Spector explains. "That means the freight forwarder or broker has to make sure that it only uses carriers that have—and maintain—their own workers' compensation insurance. Some courts have even interpreted the laws to say that the shipper or consignee can be considered the statutory employer, and is therefore responsible for driver injuries."

These types of regulations call into question the rationality of the laws, Spector adds. "If there is a view toward more stringent standards in this country, and that is what the legislature decides, that is fair. But we want to make sure that some rationality exists behind the intent of these laws," he says. "Therefore, it is important that the industry advocate for itself with a practical, common-sense approach to combat misunderstandings about the logistics business."

Strength in Numbers

For many advocates, the ticket to addressing these types of concerns and having their voices heard—and acted on—is through industry associations such as NASSTRAC, the National Industrial Transportation League (NITL), or the Transportation Intermediaries Association (TIA), which all have active advocacy programs. Banding together with other like-minded logistics professionals can be an effective tool for change, notes Rutkowski, who serves on NASSTRAC's education and advocacy committees.

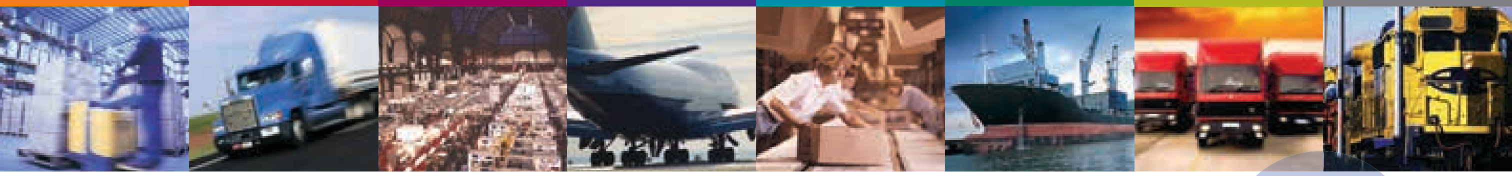
"It's important that transportation and supply chain executives remain educated on the 'what- ifs' of decisions coming out of Washington. They also need to educate legislators on the impact their decisions will have on supply chains nationwide."

—**Brian Everett,** executive director, National Shippers Strategic Transportation Council (NASSTRAC)

"The elected officials in Washington, regardless of party, will listen and respond if they hear from enough people," she explains.

In February 2012, for example, NASSTRAC and 11 other industry organizations including NITL, TIA, and the American Trucking Associations (ATA) led a "Stand Up For Trucking" fly-in to Washington, bringing together more than 175 logistics and transportation advocates from around the country. The delegation discussed transportation issues with 46 members of Congress, including Senator Mark Kirk (R-IL), former Illinois Congressman Jesse Jackson Jr., Senator Barbara Boxer (D-CA), Senator Dick Durbin (D-IL), and Senator Frank Lautenberg (D-NJ).

In a stroke of fortuitousness, the NASSTRAC-led industry coalition arrived in Washington on the day the proposed $105-billion surface transportation funding bill known as MAP-21 (the Moving Ahead for Progress in the 21st Century Act) came out of committee. "We visited at an opportune time when the legislators were especially interested to hear what shippers had to say," Rutkowski recalls.



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Several of the elected officials and their aides — even those who have historically been at odds with the transportation industry — displayed an impressive knowledge of transportation issues, she adds. Senator Lautenberg's senior aide, for example, a civil engineer well-versed on the ins and outs of transportation, sat down with Rutkowski at length to explain the senator's views.

"Ultimately, we agreed to disagree, but I give Senator Lautenberg kudos for having people on his staff who understand the industry," she says.

The group's ultimate mission—to encourage members of Congress to support the American Energy and Infrastructure Jobs Act, proposed by Rep. John Mica (R-Fla., and chairman of the House Transportation and Infrastructure Committee) instead of MAP-21—was unsuccessful.

But, "NASSTRAC continues to support the need for a multi-year highway bill that reforms the program and focuses funding on critical freight corridors," says Everett.

One provision TIA developed and the group advocated for during the fly-in—increased bonds for freight brokers—was successful. The proposal to increase the freight broker bond requirement from $10,000 to $75,000 to better protect motor carriers from being cheated by fraudulent freight brokers was included in the final version of the highway bill. "To see an issue we advocated for be successful was rewarding," Rutkowski says.

Shipper Advocacy Concerns and Involvement

The National Shippers Strategic Transportation Council (NASSTRAC) surveyed its members about their transportation legislation concerns and advocacy involvement. Hours-of-Service laws are top of mind, and most respondents work for companies that are somewhat involved in advocacy.

Most Critical Advocacy and Legislative Issues in 2013

Hours-of-Service Rule	48.4%
FMCSA Overreach Into Shipper Operations	29.5%
Unionization of Ports	22.1%
Truck Size & Weight Limits	20.5%
Infrastructure Funding	20.5%
Transportation and the Environment	17.2%

How Involved is Your Company in Shipper Advocacy and Legislative Issues?

Somewhat Involved	38.9%
Neutral	25.0%
Not Very Involved	13.9%
Not At All Involved	11.1%
Very Involved	5.6%
Don't Know	5.6%

Source: National Shippers Strategic Transportation Council, 2012

Advocacy in Action

But advocates are not resting on their laurels. Associations such as NASSTRAC are gearing up for another busy year. Several key legislative matters, including the most recent Hours-of-Service rules and concerns over tolling policies, are still being decided.

"One critical issue that may have a negative impact on transportation and supply chain strategies is the Federal Motor Carrier Safety Administration's (FMCSA) decision to revise the current hours-of-service rules for commercial truck drivers, which were adopted in December 2011," Everett says.

The new rules—which require full compliance by July 1, 2013—retain the current 11-hour daily driving limit, but require drivers to take at least one half-hour break during eight hours. They also change the restart provisions, and mandate that a driver must have two consecutive rest periods from 1 a.m. to 5 a.m. before resuming driving.

"This change could reduce capacity by as much as seven to nine percent, according to some truckload carriers," Everett says.

Testing the Limits

NASSTRAC is also tracking initiatives by safety groups to have the FMCSA reconsider reducing the driving limit from 11 hours to 10 hours. In October 2012, the organization filed a joint brief with ATA and other shipper and motor carrier interests to support the FMCSA decision to retain the 11th hour of daily driving time, based on findings that the benefits of that decision outweigh costs.

"NASSTRAC also supports ATA's goal of more flexibility as to restarts between work weeks," Everett explains. "In addition, the brief argues that public citizen and other interests pushing to reduce driver hours do not have legal standing to make their arguments."

Issues such as these—on which legislators and logistics and transportation professionals do not always see eye-to-eye—are not likely to disappear anytime soon. The good news is, professionals eager to get involved in logistics and transportation advocacy will always have a place to make a difference.

For its part, NASSTRAC is planning another shipper-driven Washington fly-in for fall 2013, and is devoting two sessions at its 2013 Shippers Conference and Transportation Expo to educating shippers and transportation professionals on key advocacy developments, and how to get involved in educating the marketplace and legislators on the impact these advocacy issues can have on operations.

"It is very important for shippers and logistics professionals to regularly meet with key legislators," says Everett. "It's up to us to continue advancing the dialogue on advocacy issues critical to the transportation industry." ■

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TWO-WAY TRAFFIC

Integrated third-party logistics solutions, expanded and improved intermodal service offerings, and creative collaborations to optimize transport resources are making cross-border shipping easier than ever.

by Lisa Harrington

RISING WAGES IN CHINA, LONG TRANSIT TIMES ACROSS THE PACIFIC, and fluctuating gas prices are fueling a nearshoring trend among manufacturers serving the North American market, and Mexico is reaping the benefits. Companies are pouring billions of dollars into new production capacity — so much so that by 2019 the country could surpass China as the United States' top trading partner, according to Mexico outsourcing solutions provider The Offshore Group.

Mexico has transitioned from a simple assembler of products to "an exceedingly sophisticated manufacturer," the Offshore Group states. The country's government has aggressively sought free trade agreements with other nations to foster growth. Mexico now has such agreements with 44 countries, and some type of free trade policy affects 90 percent of its trade.

Sourcing product from Mexico can be especially advantageous for North American businesses. "Product originating in Mexico can reach North American customers in one week or less, versus 20 to 30 days from Asia," says Troy Ryley, managing director for Transplace Mexico, a division of Frisco, Texas-based third-party logistics (3PL) provider Transplace. "This helps drive transport costs down, increases speed to market, and reduces inventory cost. It also simplifies forecasting."

U.S.-Mexico cross-border trade is not without challenges, however. Factors such as divergent regulatory regimes, capacity shortages, customs complexities, infrastructure issues, and congestion complicate the logistics picture. The good news is, improved service offerings and creative transport solutions help streamline the border-crossing process and optimize capacity.

Avoiding Handoff Hassles

"The problem with U.S.-Mexico cross-border trade has always been the handoffs," Ryley notes. "The traditional model involves partnerships between truckers and customs brokers in the United States and Mexico, all trying to work together without data correlation or visibility. A lot can go wrong, especially southbound. So when a problem occurs, finger-pointing results."

The 3PL sector, in particular, is focusing on building more integrated cross-border solutions that handle not just transportation, but all the myriad requirements inherent in streamlined trade. For example:

- Transplace co-located its Mexico and U.S. customs brokerage groups in one area to improve integration. "Our systems and technology are linked, which allows visibility," Ryley notes. "Better tracking and visibility can pull time and money out of the supply chain."
- Exel/DHL Supply Chain recently opened a 250,000-square-foot distribution center in Laredo, Texas, to support the company's Logistics Without Borders supply chain offering. This multi-client, multi-industry solution provides a portfolio of services to facilitate cross-border trade, including value-adds such as vendor-managed inventory.
- Ryder manages more than 150,000 border crossings annually for automotive and other types of customers. Its largest operation — between Laredo, Texas, and Nuevo Laredo, Mexico — provides transportation management, including a large dedicated trucking operation, milk runs, and consolidation in both the United States and Mexico; line hauls to the border; cross-border activities; and deconsolidation and delivery to manufacturing plants, distribution centers, retailers, and end consumers.

Transplace integrated technology systems in its U.S. and Mexico warehouses to gain visibility and shipment tracking capabilities in both countries.

Disparate Rules

A second border-related issue affecting U.S.-Mexico supply chains is the disparity in the legal and regulatory regimes of the two countries. One example is cargo liability.

In handling border crossings, Mexican customs brokers are liable for comparing the physical freight to the documentation to make sure they match, and for deciding classification and duty rates for goods crossing the border. If any issues or discrepancies arise, the Mexican broker can face penalties or lose its license.

"Mexican brokers often stop the freight, unload the trailer, and inspect the goods," Ryley says. "That takes time. Less-than-truckload (LTL) shipments from all over the United States get trapped by customs brokers on the border, waiting to be consolidated into truckload shipments." This unloading and re-loading, with interim warehousing, make exporting to Mexico more complex.

Another regulatory impediment that adds cost to cross-border trade is truck weight limits. "Truck weight limits are not harmonized among the three NAFTA countries," explains Sonney Jones, director of transportation at Dal-Tile, a Dallas-based subsidiary of Mohawk Industries that manufactures ceramic tile products in several countries. "Canada and Mexico allow 25 metric tons; the U.S. limit is approximately 20 metric tons. This impacts the cost of moving goods in Mexico and Canada, because loads have to comply with the U.S. limit to cross the border. It costs Dal-Tile an additional $1 million in transportation to send shipments the 145 miles between Monterrey and Laredo at the U.S. weight instead of the Mexican weight."

If the three NAFTA countries all allowed 25-metric-ton capacity, freight could move seamlessly, and the cost and capacity benefits would be significant.

Changing U.S. truck weight limits is a daunting challenge, however. The trucking industry has lobbied Washington for heavier trucks for years, but the rail industry opposes the change, fearing freight diversion.

The Intermodal Option

The rail industry has the opportunity to move from a "defensive" position in terms of cargo weight to an "offensive" position, Jones believes. "The railroads could offer heavyweight intermodal service to harmonize weights on NAFTA traffic, and grow their business at the same time," he says.

"U.S. intermodal yards could be treated as inland ports, and allow heavyweight movements within a restricted zone around the inland port," Jones continues. "This would harmonize cargo weights within NAFTA, without opening up U.S. highways to heavier trucks. This approach not only reduces costs, but could generate additional revenue for the railroads. And it's a way to address the capacity shortage that may occur as the economy recovers."

Despite these issues, there is good news regarding cross-border logistics management. Intermodal transportation, for example, is improving rapidly and becoming a popular alternative to all-truck transportation.

"Shippers now have the option of more reliable, seamless intermodal service between the United States and Mexico," says Val Noel, president of Pacer Cartage and executive vice president of intermodal operations at Pacer International, a 3PL based in Dublin, Ohio. "Intermodal offers a 15- to 20-percent cost advantage over truck."

These improvements to intermodal service come as a result of equipment and connectivity enhancements. Connectivity at the border between the forwarding and receiving railroads has greatly improved, reducing or eliminating the delays that once characterized this handoff.

For example, Kansas City Southern offers its TransBorder service, an all-rail service between the United States and Canada and major Mexican markets through collaboration with Kansas City Southern de México. Shipments do not stop at the border for customs clearance. Instead, they travel in bond, clearing customs at interior Mexican origins and destinations. TransBorder offers a through-rate structure that provides shippers a single price and bill for ramp-to-ramp shipments to and from Mexico.

Other important developments that support improved intermodal service include:

- Automation and streamlined requirements create a more efficient and effective customs clearance process. Mexico has taken steps to improve customs clearance, in particular by expanding hours of operation. Traditionally, Mexico's customs service only operated Monday through Friday, with no weekend service. Now they work to clear cargo on the weekend.
- Substantial funds have been invested in Mexico's intermodal terminal infrastructure — as well as in containers and chassis, technology for terminal reporting, and track-and-trace systems.
- Visibility is improving. "We receive more reliable and consistent information from ramp operators," reports Noel. "We are working with our trade partners to provide real-time updates from the road so we can get closer to providing real-time door-to-door visibility."

Creating Demand

Cross-border intermodal business is likely to expand over the next few years. "More than 20 new manufacturing plants

SOUTH OF THE BORDER BUSINESS BOOM

The following companies recently announced sizable investments in Mexico operations.

Company	Investment
Audi	$2,000
Ford	$1,300
Fiat	$550
Mazda	$500
Unilever	$500
Robert Bosch	$140
Praxair	$100

(all values in $US millions)
Source: The Offshore Group

Kansas City Southern's TransBorder service transports freight in bond to interior Mexican destinations, eliminating the need to clear customs at the border.

will open in Mexico over the next 18 to 24 months," notes Michael Burns, chief commercial officer, executive vice president sales and marketing at Pacer International. "Those new plants will create additional demand for parts moving into Mexico and finished goods heading out."

The continued growth in Mexico's manufacturing industry could create insufficient transport capacity to serve cross-border trade, especially southbound. These balance issues may impact cost.

"Freight flow balance varies by industry," Burns explains. "Automotive is becoming more balanced south to north. But in large household appliance manufacturing, approximately three shipments move outbound to the United States for every one inbound to Mexico."

The key is having the equipment in the marketplace to satisfy demand. "The transit time southbound is often more important because it feeds manufacturing," says Burns. "Traffic may move over the road southbound and intermodally northbound. That can cause capacity imbalances, or force us to reposition equipment, which increases cost.

"Our private boxcar can move seamlessly on steel wheels across the border," he continues. "We don't have to transfer it to a truck to move across the border. The steel wheel process takes border-crossing delays and congestion out of the equation.

"Intermodal can be a compelling tool for manufacturers if they understand that it provides cost-effective consistency," adds Burns. "It may not be as quick as over-the-road transport, but if a company has a relatively steady manufacturing pace, intermodal can be planned into the mix and be a great complement."

10 YEARS OF TRADE WITH MEXICO

U.S. exports to Mexico increased by 105 percent over the past decade, while U.S. imports from Mexico rose 91 percent.

U.S. Trade in Goods with Mexico

YEAR	EXPORTS	IMPORTS
2012	$199.9	$257.4
2011	198.4	262.9
2010	163.5	230
2009	128.9	176.6
2008	151.2	215.9
2007	135.9	210.7
2006	133.7	198.3
2005	120.2	170.1
2004	110.7	156
2003	97.4	138
2002	97.5	134.6

NOTE: All figures are in millions of U.S. dollars. Details may not equal totals due to rounding. Source: U.S. Census Bureau

Opposites Attract

From the shipper perspective, two issues are always major concerns: transportation cost and capacity, current and future. Dal-Tile is no exception. Its production network includes three plants in Mexico, two of which serve the United States and Canadian markets.

Dal-Tile's product is heavy. When shipped, it weighs out before it cubes out, which means that without some creative thinking, Dal-Tile is paying to ship a lot of empty cube.

"Improving weight or cubic capacity utilization is a challenge many shippers face," says Jones.

About four years ago, Dal-Tile began moving freight destined to the southeastern United States from its Monterrey, Mexico,

Pacer International supplies capacity to meet increased demand for cross-border intermodal transportation spurred by growth in Mexico's manufacturing industry.

plant by ocean — through Brownsville, Texas, to Tampa, Fla.

"That strategy allowed us to implement heavyweight operations, and harmonize the weight from origin in Mexico through delivery in Florida," Jones explains. "We gained 33 percent in weight capacity utilization over truck crossing in Laredo. We eliminated miles and generated significant logistics cost savings. South Florida is traditionally an expensive destination."

That solution made Jones consider how to further optimize the rest of his northbound freight. Before joining Dal-Tile, he worked for Crowley Logistics throughout the Americas, and was experienced in finding the right weight and cube mix to fill a box. "At Dal-Tile, weight was the predominant component of capacity demand, so we weren't cubing out our boxes," Jones says. "I knew lightweight product existed, but didn't know how to find it. We needed a partnership from which both parties would derive tangible benefits."

Jones tried contacting other shippers directly, but didn't make much headway. Then he contacted Transplace Mexico.

As a 3PL, Transplace had visibility to many types of freight moving out of Mexico. It could serve as a matchmaker, facilitating collaborative loading among shippers with opposite, but complementary, freight densities.

Out of this concept emerged a collaborative freight consolidation program facilitated by Transplace involving Dal-Tile; Convermex, a Mexican manufacturer of disposable plates and packaging; appliance maker Whirlpool; and ladder manufacturer Werner Co. The companies share truckload, intermodal, and boxcar capacity from Monterrey and El Paso to their various U.S. distribution centers, where the products are unloaded, and, if needed, shuttled to their final receiving DC.

Trucking shipments from Bridgestone Americas Tire Operations' facility in Cuernavaca to its customer in Ohio requires up to 10 days' lead time, prompting the manufacturer to consider intermodal transport.

The collaborative program took about 24 months to set up. "We had legal and customs issues to resolve," Jones recalls. "And the partners had to fully understand the process and see that the collaborative approach had merit: I can move 80 percent of your load and 80 percent of my load at the same time. Through the collaborative effort, we are moving 1.6 loads on what was one load previously."

The program is specific to the four parties' products, and is based on combining opposites on the density spectrum. Some costs are associated with consolidating product and length of haul. Some freight has to be shuttled to the loading location and re-handled; and processed again at the destination.

"But if you can combine 1.6 loads into one load, the length of haul allows you to more than recover the consolidation and de-consolidation costs," Jones notes.

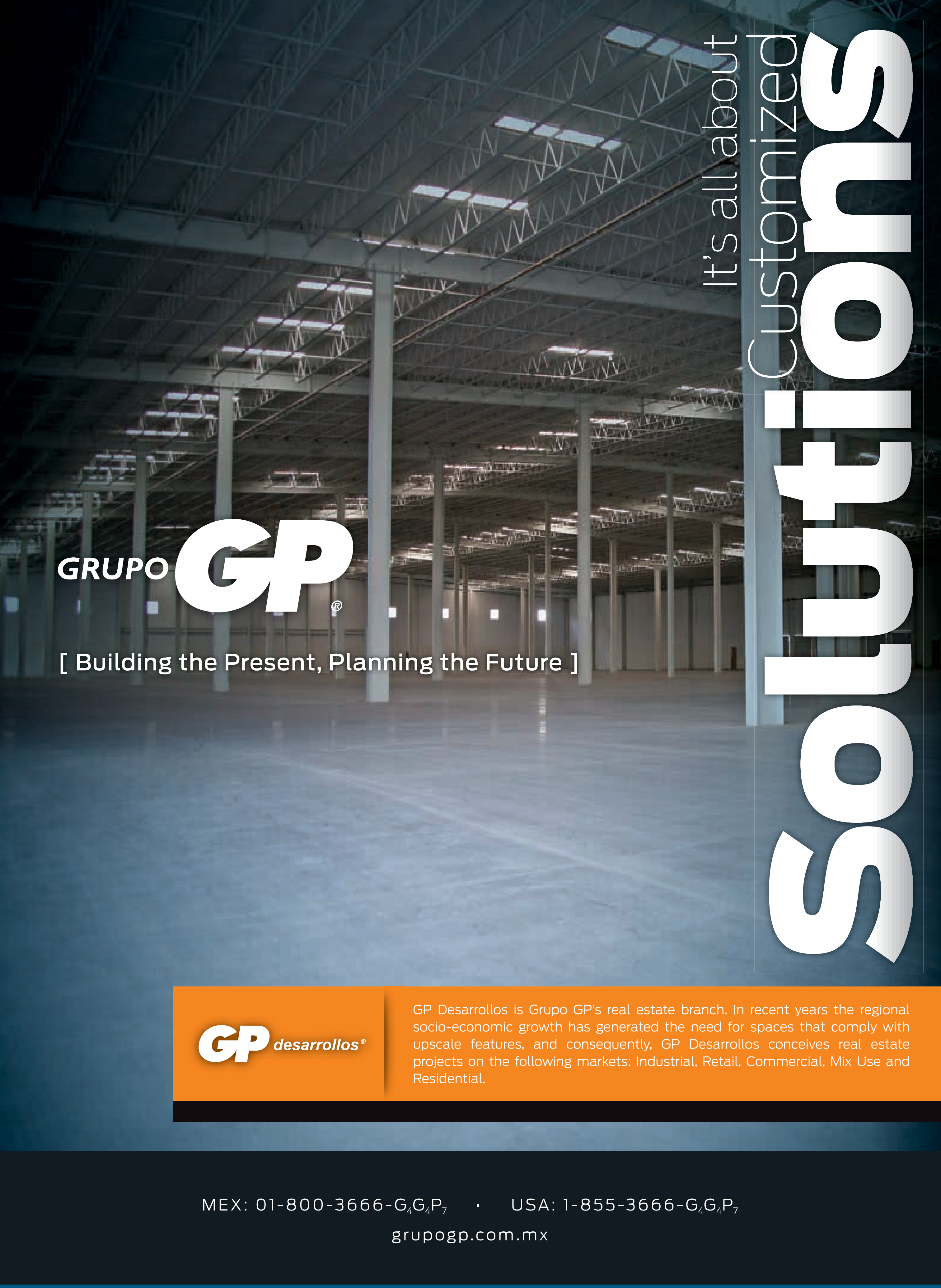
Dal-Tile's collaborations include co-loading its shipments in boxcars with Whirlpool refrigerators from Monterrey to Pennsylvania, a trip of about 2,000 miles; combining intermodal shipments with Werner Co. for the 2,200-mile journey from El Paso to Edison, N.J.; and consolidating truckloads with Convermex from Monterrey to San Antonio and Chicago.

Transplace handles administrative support for the collaboration, including transportation management, freight billing and payment among the partners and their carriers, and customs brokerage. With two companies on a shipment, the capacity owner pays the carrier. Then Transplace bills the other shipper, receives payment, and pays the capacity owner for its recovery of the freight charge.

Dal-Tile uses the Mohawk fleet to recover product from the partner delivery destinations. Whirlpool's Carlisle, Pa., DC is 75 miles from Dal-Tile's DC in Eldersburg, Md., so Mohawk shuttles the freight, then bills Dal-Tile internally for the service. The same system applies if Dal-Tile freight ends up at Werner's DC in Edison, N.J., located 225 miles from the Dal-Tile DC.

"The Mohawk fleet delivers to New Jersey daily, and has trucks that return to the Baltimore area," says Jones. "We can provide backhaul loads at a competitive rate, which adds to the solution's value."

The collaborative alliance has found that shipments moving more than 1,000 miles are acceptable from a cost-benefit perspective. "We're seeing benefits in the



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10- to 15-percent range on lengths of haul around 1,000 miles," Jones reports. "On longer hauls, we can generate 20 to 30 percent in benefits.

"The solution is 'greener' at the same time," he notes. "We reduced the demand for transportation resources by 60 percent on certain lanes." The collaborative group estimates it cut diesel use by about 500,000 gallons last year.

Beyond these savings, collaborative consolidation carries implications for transportation capacity once the U.S. economy recovers. "Capacity is tight today, so where will additional capacity come from to support economic growth?" Jones asks. "We are trying to get ahead of that curve and use capacity more intelligently."

"Intermodal provides a border-crossing advantage. Goods can move direct with pre-clearance and in bond to the United States. And there is less risk of theft and hijacking in the rail networks. Once a shipment hits the rail, it's almost impossible to steal."

—**Dan Vits,** general manager of transportation, Bridgestone

Two Sides to Security

Drug-related violence and cartels capture a lot of media attention in Mexico. The violence, and the fear it engenders, costs the Mexican economy one to two percent in annual gross domestic product, according to economist estimates.

While shippers must take extra precautions to protect their freight as it transits the country, most do not view security as a factor that would preclude them from pursuing expansion in Mexico.

"Contrary to news reports about drug violence and cartels in Mexico, actual issues of significant cargo theft are limited," says Ryley. "We have sophisticated systems for protecting high-value goods, such as hidden GPS units that enable us to find and recover the freight."

Transplace's single-party integrated service arrangements help reduce security risks. The fewer people and handoffs involved, and the more centralized the tracking, the better security will be.

Not all shippers agree with Ryley's assessment of the security risk in Mexico. Bridgestone Americas Tire Operations offers a counterpoint to the groundswell of support for expanding production capacity in Mexico. Although the Nashville-based tire company has two production plants in Mexico, which supply North America demand, it opted to build new capacity in the United States — not in Mexico.

"Bridgestone has been affected by a number of hijackings in Mexico," says Dan Vits, general manager of transportation, Bridgestone. "When product is stolen there, it's usually not covered under the same degree of cargo liability as we have in the United States."

Ten thousand hijackings occurred in Mexico in 2011, resulting in unsecured losses of $1.9 billion, according to logistics security services company Freightwatch International. Bridgestone had a small portion of that, but it's still a big concern for the company.

"Tires are attractive to thieves," Vits notes. "They can be rolled off a trailer and easily moved into the black market. And they are a good commodity to re-sell."

To thwart truck hijackings, Bridgestone requires its Mexico carriers to follow set security protocols such as providing specific route plans and never deviating from them; avoiding areas targeted by cartels; never leaving a load unsecured anywhere; equipping drivers/trucks with electronic communication; and using escorts for loads traveling through especially dangerous routes.

Insurance and liability for freight in Mexico is another troubling issue for Bridgestone. "You have to pay Mexican carriers for additional insurance up front or be willing to risk total loss," says Vits. "Insurance is much more expensive in Mexico, so we just accept the risk of loss as a cost of doing business there."

In addition to cargo security concerns, Bridgestone chose to expand in the United States instead of Mexico because of its workforce needs. Although labor costs less in Mexico, overall productivity is higher in the United States. Also, the United States sees less workforce turnover. "We are constantly hiring and training workers in Mexico," notes Vits.

Bridgestone also considers driver hours of service a challenge in delivering to U.S. markets from Mexico because of the length of haul. From Bridgestone's Cuernavaca plant to a large manufacturer in Ohio, for instance, Vits must allow seven to 10 days' lead time for over-the-road transport—which includes the hours-of-service break.

Because of this delay, and the cost advantage, Bridgestone is considering expanding intermodal from Mexico. "Cost is our main driver," Vits says. "But intermodal also provides a border-crossing advantage, because there's no Laredo stop and no interchange timing. Goods can move direct with pre-clearance and in bond to the United States. Finally, there is less risk of theft and hijacking in the rail networks. Once a shipment hits the rail, it's almost impossible to steal."

Entwined Opportunities

Mexico's steady ascendance in trading partner ranking with the United States makes cross-border supply chain management an exciting and highly dynamic proposition. Growth brings change, as clearly evidenced by the emergence of integrated 3PL solutions, expanded and improved intermodal service offerings, and creative collaborations to optimize transport resources. From all indications, the economic engine of trade will drive further streamlining of cross-border logistics. ■

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COMFORT ZONE

A BETTER, FASTER FTZ

The Alternative Site Framework designation is changing the Foreign Trade Zone landscape, allowing shippers a more expedient process for streamlining the supply chain. by Joseph O'Reilly

Foreign trade zones (FTZs) are often perceived like the regulatory governance they operate under: inflexible, complex, and slow — a product of bureaucratic red tape run amok.

But some of those perceptions have changed considerably over the past few years, much to the benefit of U.S. importers and exporters.

The Foreign-Trade Zones Board announcement in 2009 that it would adopt a proposal for an Alternative Site Framework (ASF) opened the doors to a more streamlined FTZ program. The advantages remain the same. Importers and exporters still gain by distributing and performing value-added activities within the zone's confines, and without entering product through Customs. But it is quicker, easier, and more flexible to tailor these regulatory allowances to unique user facilities rather than general-purpose sites.

It has been four years since the ASF initiative eased restrictions and FTZs, shippers, third-party logistics (3PL) providers, and area economic development authorities are beginning to see the new measure as a major stimulus for supply chain economy and efficiency, while growing industrial activity around U.S. ports of entry.

"The ASF is designed to serve zone projects that want the flexibility to both attract users/operators to certain fixed sites, and to serve companies at other locations where demand for FTZ services arises in the future," according to the FTZ Board's official application form.

This new model contrasts with the traditional framework that centers on attracting FTZ activities to a few fixed magnet sites or general-purpose zones — many of which serve multiple users at ports and industrial parks. The alternative framework allows users to simplify the process while expediting the benefits through their own existing facilities.


Companies in 25 Central Ohio counties can take advantage of the economic benefits and time savings offered by Foreign-Trade Zone No. 138, part of the Rickenbacker Inland Port.

Columbus Discovers ASF

One example of this new directive is the Columbus Regional Airport Authority, a grantee of Foreign-Trade Zone No. 138. It is part of the Rickenbacker Inland Port, an international multimodal logistics hub encompassing central Ohio. The Columbus FTZ has been in the ASF program since 2010, and its fourth new site was recently approved.

"A traditional program application could take six months to one year to process," notes Angie Atwood, FTZ administrator at Columbus Regional Airport Authority. "But with ASF, companies determine their needs and justification up front, and the

The ABCs of FTZs

FTZ User Benefits:

1. No duties or quota charges on re-exports.
2. Customs duties and federal excise tax deferred on imports.
3. When zone production results in a finished product that has a lower duty rate than the rates on foreign inputs (inverted tariff), the finished products may be entered at the duty rate that applies to their condition as they leave the zone.
4. Foreign and domestic goods held for export are exempt from state/local inventory taxes. FTZ status may also make a site eligible for state/local benefits unrelated to the FTZ Act.

FTZ Public Benefits:

1. Helps facilitate and expedite international trade.
2. Provides special customs procedures as a public service to help firms conduct international trade-related operations in competition with foreign plants.
3. Encourages and facilitates exports.
4. Helps attract offshore activity and encourages retention of domestic activity.
5. Assists state/local economic development efforts.
6. Helps create employment opportunities.

Current U.S. FTZ Statistics:

1. U.S. communities with zones: 200+
2. States with zone projects: 50
3. Pending cases for new zones, expansions, sub-zones, and manufacturing: 60
4. Value of merchandise handled by zones: ~$534 billion
5. Employment at active zone facilities: 300,000+
6. Exports: $34.8 billion

Nearly 60 percent of incoming zone shipments are of domestic status (most of this figure represents domestic origin goods, but a small percentage are duty-paid/duty-free foreign items).

Source: U.S. International Trade Administration

FTZ board provides 2,000 acres to locate anywhere in their service area."

The same core FTZ stipulation remains unchanged under the new ASF. Usage-driven and magnet zone sites need to meet the "60-mile, 90-minute" from port of entry adjacency provision. In central Ohio, this touches 25 counties, with Rickenbacker International Airport as the anchor. Following ASF approval and designation, companies go through the process of securing and activating the site per Customs guidelines.

"Companies still have to apply to the FTZ board, but it's a simplified process. And the board guarantees approval within 30 days," adds Atwood. "That has re-energized our zone."

Timing is Right

The ASF couldn't have come at a better time. The recession that swept through the United States in 2009 pressed companies to turn over stones looking for ways to squeeze out costs — and FTZs are one area where some shippers turned. It's not a silver bullet solution, but for product categories that incur high duties, or have significant volumes entering U.S. commerce, gains can be appreciable.

FTZ No. 138 is home to textile, footwear, pharmaceutical, and electronics companies — all of which have established pedigrees using FTZs. And a growing 3PL presence provides support capabilities to companies that operate in the area, creating a robust network of manufacturing and logistics activities.

Much activity in and around Columbus is geared toward distribution. The area has become an intermodal logistics hub along Norfolk Southern's Heartland Corridor that links Norfolk, Va., to Chicago. The region also has an established airfreight legacy, of which Rickenbacker International Airport is the centerpiece.

A pure distribution environment offers fewer inverted tariff or duty reduction gains because product generally moves swiftly through the facility. But when companies are manipulating product or re-exporting goods, the savings can be significant.

"One pharmaceutical company using our FTZ does distribution and some manufacturing," says Atwood. "Medicine in raw form has a duty, but when it becomes a pill it has a zero duty rate."

Heavy textile importers using the FTZ file one Customs Entry per week, therefore paying only one merchandise processing fee, rather than filing and paying a merchandise processing fee for each entry. They also re-export to their international stores.

A Business Model Fit

The FTZ doesn't change the way a company manages its supply chain — unless it wants to. Importers can bring shipments in and bypass Customs at any port of entry, then put the freight on a train, truck, or plane using bonded carriers. Companies still have to fill out a Customs form to admit goods into a zone, but technically cargo is not entered, so shippers can defer, reduce, or eliminate duties until product eventually leaves the FTZ.

The FTZ fits seamlessly within many small shippers' business models *(see sidebar below)*. For larger companies, it becomes a platform for a more strategic change.

"One large distributor had to retool what it was doing to fit the FTZ into its network," Atwood explains. "The company is saving a lot of money, not only on weekly entry, but it is using that facility to fulfill orders for international stores."

For more complex manufacturing, such as automotive, the benefits of using an FTZ grow exponentially. Automakers have always been active FTZ users because they source myriad components from around the world for assembly — components that often carry a high duty rate. Foreign auto companies that manufacture in the United States, and ship finished cars for worldwide distribution, stand to gain the most. Many are making parts overseas, importing them to the United States for assembly, then re-exporting — without ever entering U.S. Customs and therefore paying zero duty.

The promise of luring more value-added manufacturing and distribution activities

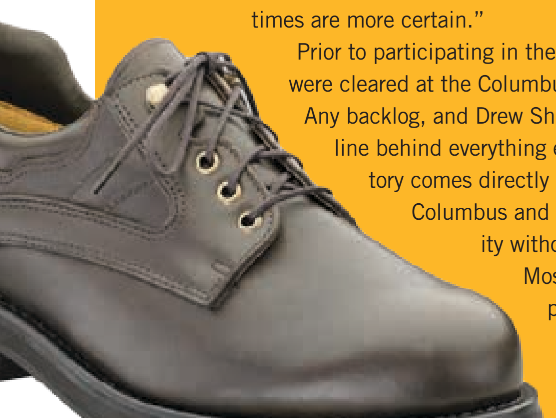
If the FTZ Fits...

Drew Shoe Corporation, headquartered in Lancaster, Ohio, has been involved in the FTZ program since December 2009, when it had its location set up as a subzone of Columbus FTZ No. 138. The company specializes in selling orthopedic footwear.

"We don't do any manufacturing," says Pete Struzzi, CFO and treasurer at Drew Shoe Corporation. "We just receive product, store it in the zone, pick it, and ship it."

Since the company made the move in 2009, it has been able to take advantage of the FTZ in different ways.

"It allows us quicker access to incoming inventory because we clear it at our facility," says Struzzi. "This eliminates any delays at the railhead due to processing backlogs, for example. It also allows us to better plan resources, because delivery times are more certain."



Prior to participating in the FTZ, all goods were cleared at the Columbus port of entry. Any backlog, and Drew Shoe's product fell in line behind everything else. Now inventory comes directly off the rail in Columbus and moves to its facility without undue delay.

Most of Drew Shoe's product comes from China through the West Coast in Seattle-Tacoma, then via train to the Midwest. The company imports a smaller volume of product from Italy and Holland that is channeled through the East Coast.

"A large part of our business involves direct fulfillment, which necessitates higher inventory levels and slower turns," Struzzi says. "This dynamic optimizes the duty deferral benefit of the FTZ by conserving cash and reducing interest expense. Adding to this benefit is the fact that the duty rate on our imported goods is relatively high."

Using an FTZ may not make sense for smaller importers if their product has a low duty rate or small volume. "Every company is different," notes Angie Atwood, Columbus Regional Airport Authority's FTZ administrator. "Shoes have a 38-percent duty rate. That's the difference. You have to have a bigger volume if your duty rate is only two percent."

Drew Shoe also ships product to Canada and other countries, and using the FTZ enables it to avoid paying double duty on imported goods that are then re-exported. The alternative would be to use a duty drawback process, which is labor-intensive and time-consuming.

Struzzi has even found the FTZ's record-keeping requirement further incentive to keep a sharp focus on inventory control. "In fact, it has complemented our efforts to make sure inventory is as accurate as possible at the SKU level," he says.

"The FTZ program has been a definite advantage to our operation," Struzzi adds. "This is especially the case with the ASF program, which dramatically cuts red tape, time, and expense to get set up as a zone."

to the Columbus area stokes even greater optimism for how the FTZ can transform the local economy. And it provides a blueprint for other trade hubs around the country trying to stimulate industrial growth.

"Whether it's a manufacturing company or a distribution facility, it's all about attracting and retaining business in our service area," says Atwood. "We want the FTZ to affect a company's bottom line so it can hire more people and expand business in Ohio. We don't disqualify any company that provides a benefit."

Grand Plans in Michigan

A similar development is happening in Grand Rapids, Mich., the home of Columbian Logistics and the location of Kent-Ottawa-Muskegon (KOM) Foreign-Trade Zone No. 189. The zone is under the grantee authority of the Van Andel Global Trade Center, which, in turn, is managed by Grand Valley State University. Columbian Logistics operates two magnet sites as part of the FTZ.

KOM received its FTZ authority in 1993, but just recently sought designation for restructuring as an ASF. "The application process was seamless," says Sonja Johnson, executive director of the Van Andel Global Trade Center at Grand Valley State University.

"The KOM board, which includes county commissioners, economic developers, and small businesses across the three counties, took its time in reviewing the new ASF program. They spent one year evaluating how other zones responded, and how well it was received in their communities," she says. "We finally submitted our application to restructure in February 2012, and in August received our formal designation under the new framework. It sparked a lot of interest with companies we work with."

The speed and ease with which companies can now activate a user-driven FTZ zone — versus participating in a traditional magnet site or general purpose zone — has become a major game changer.

"The flexibility factor — the shorter, more definitive timeline — is paramount to getting companies to look seriously at this program," Johnson says. "I'm getting answers from the Foreign-Trade Zones Board within 30 days of receiving an application."

Case in point: Johnson started working with a client for its first usage-driven site under the new ASF designation in late June 2012. In September, they began discussions to outline details of the project. With the client and Customs, she toured the production facility on Nov. 7, 2012. One day later, they submitted a draft proposal and received feedback. They formally entered the application on Nov. 28, and received the designation on Nov. 29.

"Because it's a manufacturing site, it still has to go through Customs' production notification and activation process," she adds. "But it's moving right along. The board is looking to approve projects quickly as long as paperwork is filed correctly."

The convenience with which companies can now submit applications for FTZ designation at their own sites is a major incentive. As in Columbus, companies can explore opportunities at existing inbound facilities without entirely re-circuiting their networks. As long as a location meets Customs' requirements, companies can designate a warehouse that they own or sub-lease without having to redirect product into a designated structure.

A Magnet for Trade Growth

From Columbian Logistics' perspective as a magnet site, the ASF directive doesn't change day-to-day operations. The company's talent is inventory management, which complements activities within an FTZ.

"If the program attracts more usage-driven sites, that makes the magnet site more valuable," says John Zevalkink, CEO of Columbian Logistics. "The opportunity to do zone-to-zone transfers allows service providers to support an FTZ site with logistics services and still be considered within the zone."

Columbian Logistics remains a vital cog in the FTZ machine. Many small and medium-sized shippers don't have enough volume to warrant designating their own site, but still see the benefit of deferring duty and tariff rates, and other ancillary taxes. Or maybe they don't have the advanced tracking systems and capabilities to feed FTZ transactions. They can work with a 3PL such as Columbian Logistics that has a magnet site, is bonded,

PortMiami Launches FTZ Satellite Program

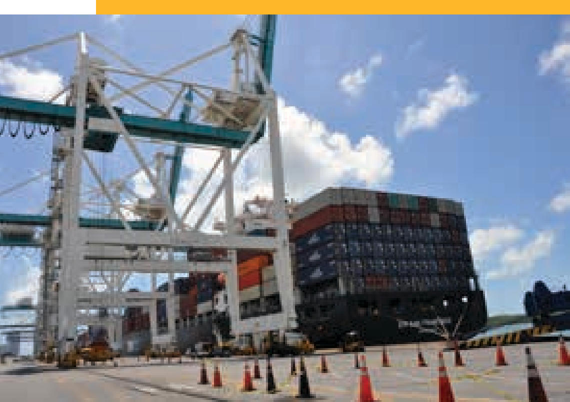
With the completion of the Panama Canal expansion looming closer in 2015, PortMiami has been ramping up investment to accommodate the expected container volume surge. In August 2012, the U.S. Department of Commerce approved PortMiami's application for Foreign Trade Zone designation, setting the stage for further commercial expansion and growth in surrounding Miami-Dade County.

Following the new Alternative Site Framework (ASF) model for FTZs, PortMiami is establishing satellite zones that will allow individual companies to leverage the benefits of an FTZ at their own secure warehouse locations.

Inbound Logistics asked David Banfield, director, sales and port development at Florida East Coast Railway, about the benefits of PortMiami's new FTZ satellite program.

Q. How do the new 'satellite zone' concept and the FTZ's Alternative Site Framework designation benefit shippers that locate a facility at PortMiami?

DB: PortMiami FTZ No. 281 creates a 'mega' zone, providing more accessible foreign trade growth opportunities for Dade County as a whole, while simultaneously reducing the application process time and the cost for companies that want FTZ status. Benefits to importers and exporters include: an expedited alternative to slower, off-shore transshipment models offered elsewhere in the Caribbean region; reduced and deferred import/export transactional costs; and the ability to establish a South Florida inventory base for the global market, linking Asian, Latin American, and European markets.



The U.S. Commerce Department granted PortMiami the authority to establish FTZ No. 281. The new zone is among the nation's first to operate under the ASF streamlined process.

Q. How will this FTZ enhance trade flow at the port?

DB: The FTZ allows foreign products to enter the U.S. market at a lower cost, which is the fundamental basis behind any international transaction. If a foreign exporter encounters too many barriers to competitively sell product in U.S. markets, then international transactions are hampered from the onset. The investment in South Florida port, rail, and FTZ infrastructure not only increases shipment flow through PortMiami and Florida more efficiently, it creates the opportunity for the port to leverage growing foreign demand for U.S. exports.

Q. How will PortMiami's FTZ integrate with the other FTZs in the area?

DB: The port's new, expanded FTZ will reduce individual zones and create one larger, more efficient FTZ. This empowers companies to design their international trade patterns around one centralized hub that can link to other inland U.S. FTZs in the Midwest. Ultimately, this single hub will provide even greater market penetration for foreign imports into U.S. markets for resale or re-export.

and can execute immediately on a transactional basis.

"It's an opportunity for small businesses to bleed out some cost and stay competitive by taking advantage of a structure that already exists," says Johnson.

Companies also have opportunities to expand zone-to-zone transfers. "One customer doesn't have space in an existing facility to stage additional inbound product, so it's considering Columbian Logistics," she adds.

As a 3PL, Columbian supports manufacturing by maintaining inventories of raw materials or finished goods that move in and out of a plant. Columbian Logistics does in the FTZ environment what it excels at in the commercial 3PL space.

"We support some manufacturing plants that process foods, for example," says Zevalkink. "They may partially process a product on the line, and end up with work-in-process inventory. In between, that product might be moved to a magnet site for storage, then transferred back when the processor is ready to finish the work.

"That's what we do every day in the domestic world," he adds. "The new FTZ rules made it easier to set up a usage-driven site, expanding our benefits as a magnet site."

Zone-to-Zone Transfers

Zone-to-zone transfers present new opportunities for some companies to explore more strategic initiatives. For example, Wolverine, a Michigan-based footwear and apparel company, is a partner in the KOM FTZ. As a growing business, it's looking to streamline product flow throughout its North American supply chain.

"Wolverine will be taking advantage of zone-to-zone transfers across North America to defer duties until it actually pulls product out of the supply chain, because footwear and apparel carry considerable duties," says Johnson.

Wolverine has also looked at zone-to-zone transfers as a way to manage seasonality. It's another option to mitigate peak-season spikes without completely structuring a new solution. And if the company takes advantage of weekly entries, it can hold more inventory for a longer time without paying additional duties on frequent inventory turns.

Since filing for the ASF, Johnson has had interest from companies focused on inverted tariffs — how importers can use the FTZ to bring in product components or pieces that have a higher duty rate than the finished goods that ultimately leave the zone. That's a major selling point for companies that are moving more complex shipments. And it can impact how and where in the supply chain companies decide to add value to their products. Even with apparel, a business can cut a bolt of fabric and sew it on to a particular item, and the finished good may change the duty classification when it leaves the FTZ.

"If a company can get a 3.5-percent duty item down to a zero or 0.5-percent duty rate, it can start to look at supply chain costs from the origin point," says Johnson. "It can consider a lot of variables."

The ASF opens up more doors to look through in terms of supply chain structure. "It challenges supply chain managers; it's not the same old way we did business before," she adds.

From Bound to Boundless

Before the Columbus Regional Airport Authority received ASF designation, its plan was to grow the FTZ around six expansion sites throughout central Ohio.

"It was challenging to get prospective customers to come to a pre-designated location, whether a building was there or not," recalls Atwood. "Invariably, they wanted the building across the street that wasn't part of the FTZ. We'd get interest, but then we had to move forward with lengthy modifications. That's why we got involved with the ASF."

To say that the new ASF designation is a step forward would be an understatement. In many ways, it's a leap in a new direction that provides U.S. industry with much-needed stimulus. It allows companies to embrace and execute the FTZ concept without jumping through complicated and lengthy regulatory hoops. It's also tearing down walls within organizations.

"Based on our FTZ experience in western Michigan, the idea of 'build it and they will come' couldn't be further from the truth," explains Zevalkink. "It's still a complex process, and the value is complicated because it's tax-driven.

"Using an FTZ takes some serious evaluation. It typically requires buy-in from outside the logistics group," he adds. "One reason the FTZ concept hasn't grown as fast as it could is because it's not logistics managers who want it; it's finance managers trying to reduce taxes and costs. That's why we are so excited about these changes; they make it easier to gain benefits."

Companies should consider using an FTZ, where appropriate, as part of their U.S. distribution network for myriad reasons. A waffling economy has logistics and supply chain organizations on alert for ways to squeeze costs out of their operations.

Companies can leverage a usage-driven or magnet FTZ — or both — to perform countless value-added activities beyond standard distribution. It can serve as a quality-control checkpoint before importers file an entry — if a product gets rejected they don't have to pay the duty. The FTZ can be a temporary staging area for products that require additional testing before regulatory inspection — especially food-grade shipments.

And, as industry becomes more attuned to sustainability efforts, shippers can tap the zone as a place to process and recycle manufacturing materials, then sell scrap at a reduced duty rate.

FTZ adoption similarly raises the profile of 3PLs, customs brokers, and consultants that operate in that space. It provides 3PLs with new opportunities to expand their service capabilities and value proposition.

These opportunities are boundless. Zone-to-zone transfers have added a dynamic that only expands an FTZ's value. It's akin to creating a self-supporting, multi-dimensional, and functional network behind a Customs firewall. Often the concept of using an FTZ drives shippers to reevaluate how they look at total landed costs, and how adding value to work-in-process goods closer to demand may create additional savings. At the very least, it can initiate a more strategic dialogue.

The ASF is a major progression for customs and trade regulations often perceived as onerous and archaic. It motivates shippers to expand manufacturing and logistics activities around ports of entry. It facilitates and supports U.S. trade and commerce.

Says Atwood: "The FTZ program now runs at the speed of business rather than the speed of government." ■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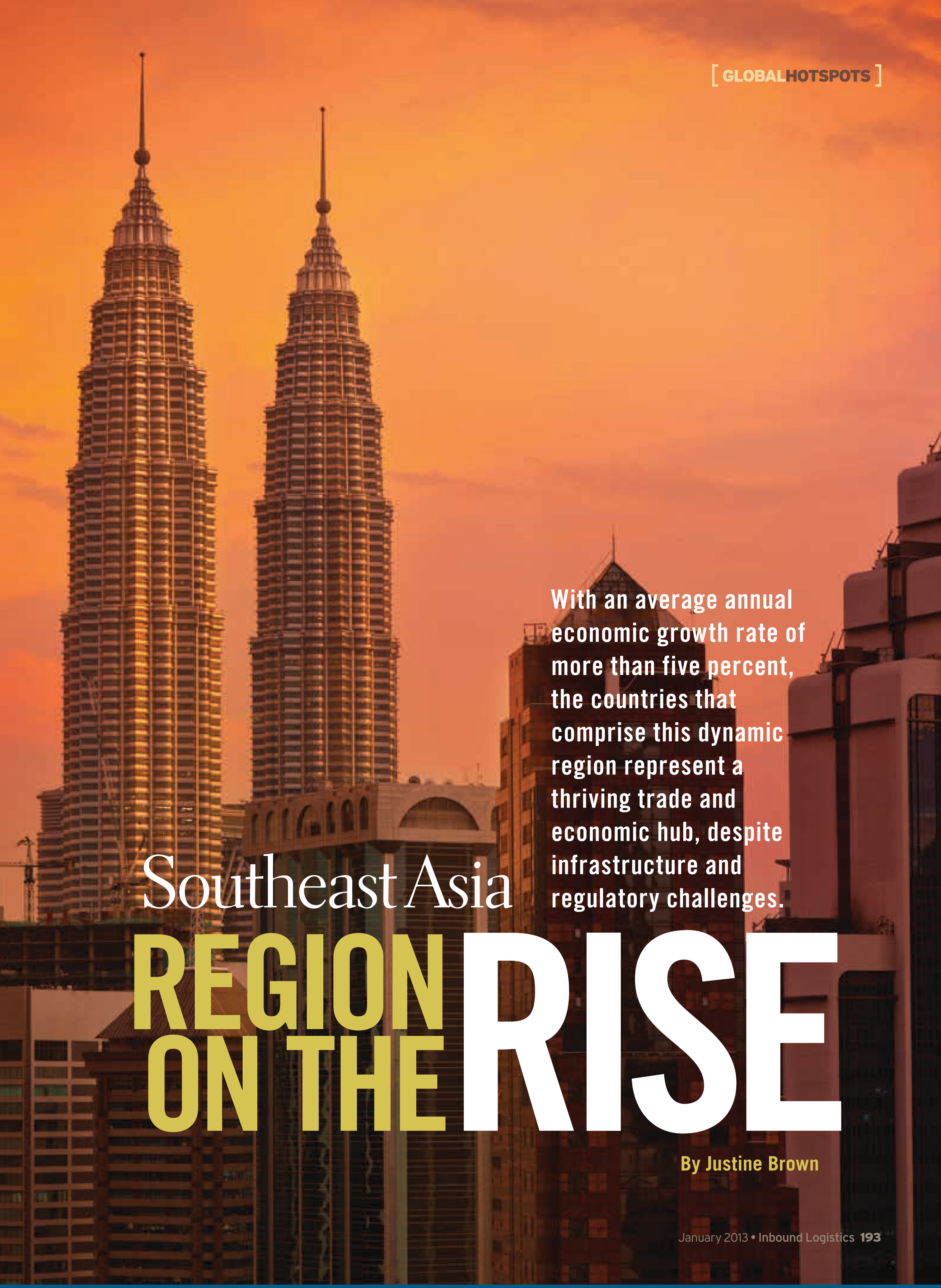


Southeast Asia REGION ON THE RISE

With an average annual economic growth rate of more than five percent, the countries that comprise this dynamic region represent a thriving trade and economic hub, despite infrastructure and regulatory challenges.

By Justine Brown

Consisting of 11 countries reaching from eastern India to China, Southeast Asia is generally divided into "mainland" and "island" zones. The mainland—comprising Burma, Thailand, Laos, Cambodia, and Vietnam—is an extension of the Asian continent, while Island Southeast Asia includes Malaysia, Singapore, Indonesia, the Philippines, Brunei, and the new nation of East Timor, formerly part of Indonesia. These countries' diversity lies at the heart of the region's rapid economic growth.

Southeast Asia's 11 countries have a combined gross domestic product (GDP) of $1.9 trillion; a population of almost 600 million people; and an average per-capita income nearly equal to China's, according to *Southeast Asia: Crouching Tiger or Hidden Dragon?*, an article published by the International Economic Bulletin.

Over the past decade, the countries have averaged a growth rate of more than five percent per year. If Southeast Asia were one country, it would be the world's ninth-largest economy. It would also be the most trade-dependent, with a trade-to-GDP ratio in excess of 150 percent.

U.S. imports from Southeast Asia have grown steadily over the past few years, reports global trade intelligence firm Zepol (*see chart below*). Much of this import traffic comes from Malaysia and Thailand, but Vietnam is quickly catching up. The region as a whole experienced significant U.S. import growth in the third quarter of 2012, rising 1.3 percent from the third quarter of 2011.

"Trade activity is increasing in Southeast Asia, particularly from Vietnam," says Paul Rasmussen, CEO, Zepol. "As labor costs rise in China, more companies are turning to nearby countries to fill their orders."

All 11 Southeast Asian countries belong to the Association of Southeast Asian Nations (ASEAN), a 45-year-old regional organization that promotes economic integration, and aims to create an Economic Community — a single market for goods, services, investments, and skilled labor — by 2015.

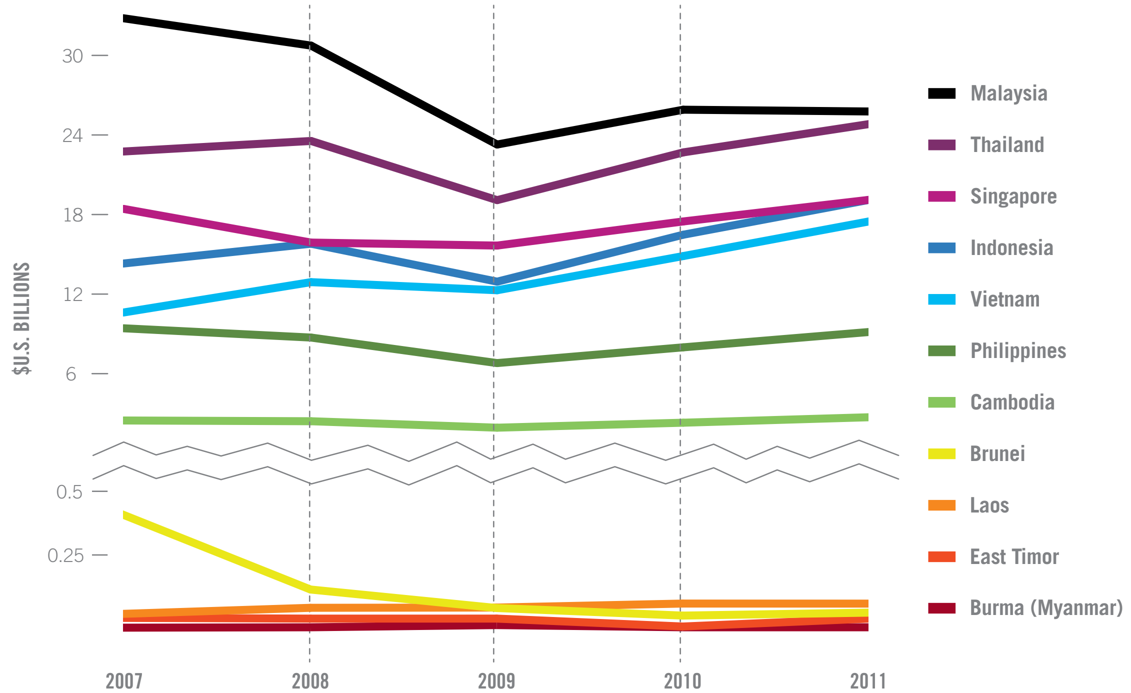
Infrastructure Challenges

For much of the 1990s, Southeast Asia was the infrastructure finance capital of the world. But after the Asian financial crisis in 1998, the sector slowed dramatically. Today, despite economic growth, much of Asia continues to grapple with an infrastructure deficit.

"While GDP, industrial output, and consumption have soared across the region over the past decade, power, water,

U.S. Imports from Southeast Asian Countries

U.S. imports from Southeast Asia have increased year-over-year since 2009, and 2012 was expected to continue this trend*. The top countries for U.S. imports from the Southeast Asian region include Malaysia and Thailand; however, Vietnam has seen the largest growth increase overall.



Source: Zepol Corporation, www.zepol.com. *Final 2012 data was not available at press time.

and transport systems have struggled to keep pace," writes Nicolas Lord in *Changing Lanes*, an article in *Emerging Markets*.

Since Asia's financial crisis, the region's infrastructure needs have almost exclusively been met by the state. "But the requirements are now so large, and the demand for quality so great, that the way Asian infrastructure is being financed is undergoing a profound change," continues Lord.

Many governments are now actively courting private involvement. Over the next 10 years, $1 trillion of the region's projected $8 trillion in infrastructure projects will be open to private investors under public-private partnerships, estimates a recent report by global consultancy McKinsey.

But regulatory risks—including excessively high transport costs, urban congestion, and inadequate air transport competition and efficiency—are likely to hold back private capital from reaching its full potential in the region.

Looking Ahead

While Southeast Asia has experienced significant economic growth over the past 10 years, it is a region at a crossroads. Its continued growth relies on deeper regional cooperation and integration from a policy perspective, and market-driven intervention by businesses that aspire to expand their footprint across the national borders, according to *Destination Southeast Asia: A Joint Pathway to Future Growth?*, a 2011 report from consulting firm Accenture.

"Early indicators are promising stable real GDP growth; substantial (and growing) consumer markets; strong labor forces; and steady economic and market transitions across its economies," notes the report. "By taking the right path now, the region will be well on its way to becoming a formidable economic powerhouse by 2020."

Here's a closer look at five of the Southeast Asian countries that will lead the way.

SINGAPORE

Singapore recently ranked as the number one logistics hub among 155 countries globally in the World Bank's 2012 Logistics Performance Index.

"Singapore's strategic location in the heart of Southeast Asia, and at the nexus of major shipping lanes, has made it an important logistics hub and conduit for world trade," says Paul Rasmussen of Zepol.

Singapore is a prime location for major logistics firms – 20 of the top 25 global logistics service providers conduct operations there. Most of them—including DHL, Kuehne + Nagel, Sankyu, Schenker, Toll, UPS, and Yusen Logistics—have set up regional or global headquarters in Singapore.

Brani Terminal, Port of Singapore

With an expansive base of leading global logistics players, world-class infrastructure, and excellent global connectivity, Singapore is the preferred logistics and supply chain management hub for leading manufacturers, including Avaya, Diageo, Dell, Hewlett Packard, Infineon, LVMH, Novartis, ON Semiconductor, Panasonic, and Siemens Medical Instruments.

Singapore's Changi Airport is one of Asia's largest cargo airports, and is served by more than 6,100 weekly flights connecting to 210 cities in 60 countries, handling close to two million tons of cargo. The country also boasts the world's busiest seaport and is the world's top transshipment hub, handling close to 30 million TEUs in 2011. Ocean carrier APL transports the majority of goods from Singapore, followed by OOCL and NYK Line. Singapore is connected by 200 shipping lines to 600 ports in 123 countries, with daily sailings to every major port of call in the world. It is also proximate to the world's major markets, and a seven-hour flight from half of the world's population in Asia Pacific.

Pharmaceutical products from Singapore experienced an upward spike in the third quarter of 2012, similar to the trend seen in 2011. Computer accessories and semiconductors also top the U.S. import list from Singapore.

Top 10 U.S. Imports from Singapore

1. Pharmaceuticals
2. Computer accessories
3. Semiconductors
4. U.S. goods returned, and re-imports
5. Chemicals-organic
6. Industrial machines
7. Medical equipment
8. Telecommunications equipment
9. Electric apparatus
10. Measuring, testing, control instruments

All import data provided by Zepol Corporation (www.zepol.com); rankings are for Jan. 2010 to Sept. 2012.

Jakarta, Indonesia

INDONESIA

Indonesia was the 27th-largest exporting country in the world in 2010, moving up three spots from 2009, according to World Trade Organization data. Indonesia's main export markets are Japan (17.28 percent), Singapore (11.29 percent), the United States (10.81 percent), and China (7.62 percent).

The country's major export commodities include oil and gas, electrical appliances, plywood, rubber, and textiles. Indonesia's top export to the United States is apparel and household goods made from cotton, followed by rubber and non-wool or cotton apparel and textiles. The country's major imports include machinery and equipment, chemicals, fuels, and foodstuffs. U.S. imports of crude oil from Indonesia have plummeted in recent quarters.

"The Port of Jakarta has seen a drop in TEUs, while the Ports of Semarang and Palembang are gaining market share," says Rasmussen. APL and Maersk Line are the top two ocean carriers for U.S. imports from Indonesia.

The country's economy, one of the largest in Southeast Asia, involves both the private sector and government playing significant roles. The industry sector is the economy's largest, and accounts for 46.4 percent of GDP. It is followed by services (37.1 percent) and agriculture (16.5 percent). The country has extensive natural resources, including crude oil, natural gas, tin, copper, and gold.

But weak transport infrastructure has hindered Indonesia's integration into regional production chains and its internal economic integration and development, according to *Southeast Asian Economic Outlook 2010*, a report from the Development Centre of the Organization for Economic Co-Operation and Development. "The problems in transport can be attributed to a combination of inadequate roads, ports, and other physical infrastructure, together with weak regulatory policies, customs procedures, and planning," says the report.

Indonesia's authorities have recently taken a number of steps to promote more effective infrastructure development, including measures to encourage private-sector investment, improve customs procedures, and combat corruption.

Top 10 U.S. Imports from Indonesia

1. Apparel, household goods – cotton
2. Natural rubber
3. Apparel, textiles – non-wool or cotton
4. Fish and shellfish
5. Camping apparel and gear
6. Crude oil
7. Furniture, household goods
8. TVs and VCRs
9. Automotive tires and tubes
10. Computer accessories

MALAYSIA

Malaysia, the leading Southeast Asian country for U.S. imports, experienced a massive increase in the number of exports of semiconductors and telecommunications equipment to the United States in recent years. Conversely, computer accessories and computers being imported from Malaysia have dropped significantly in 2012. Most of Malaysia's exports depart through the Port of Tanjung Pelepas; Maersk Line and CMA CGM are the top ocean carriers.

Continuing global economic uncertainties and lower commodity prices are expected to impact Malaysia's GDP growth in 2013, according to the Institute of Chartered Accountants in England and Wales. In 2011, the GDP was about $450 billion – the third-largest economy in ASEAN, and 29th-largest in the world.

Malaysia's infrastructure is one of the most developed in Asia. The country's longest highway, the North-South Expressway, extends 500 miles between the Thai border and Singapore. The road systems in East Malaysia are less developed and of lower quality in comparison to that of Peninsular Malaysia.

Malaysia operates 118 airports, of which 38 are paved. The country's official airline is Malaysia Airlines, providing international and domestic air service alongside two other carriers. The railway system is state-run, and covers a total of 1,149 miles. The Asean Rail Express is a railway service that connects Kuala Lumpur to Bangkok, with plans to eventually stretch from Singapore to China.

Top 10 U.S. Imports from Malaysia

1. Semiconductors
2. Telecommunications equipment
3. Computer accessories
4. Food oils, oilseeds
5. Medical equipment
6. Household goods
7. Electric apparatus
8. Furniture
9. Computers
10. Measuring, testing, control instruments

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THAILAND

Thailand's top export to the United States is computer accessories, followed by telecommunications equipment and fish. Nearly all exports from Thailand depart from the Port of Laem Chabang, and arrive at the Port of Los Angeles. U.S. imports from Thailand were up three percent year-to-date in 2012, compared to 2011.

Thailand has a GDP worth U.S. $602 billion, classifying the country as the second-largest economy in Southeast Asia after Indonesia. Despite this ranking, Thailand falls midway in the wealth spread in Southeast Asia, as it is the fourth-richest nation based on GDP per capita—after Singapore, Brunei, and Malaysia.

Top 10 U.S. Imports from Thailand

1. Computer accessories
2. Telecommunications equipment
3. Fish and shellfish
4. Parts and accessories
5. Jewelry
6. TVs and VCRs
7. Semiconductors
8. Natural rubber
9. Automotive tires and tubes
10. Apparel, household goods—cotton

VIETNAM

Vietnam may be the fastest growing of Southeast Asia's emerging economies by 2025, with a potential annual growth rate of about 10 percent in real dollar terms, according to a forecast by PricewaterhouseCoopers. That would increase the economy's size to 70 percent of the United Kingdom's by 2050.

Apparel, textiles, and furniture are the top products imported from Vietnam to the United States. "Year-to-date, U.S. imports from Vietnam are up 15 percent compared to 2011, making the country one of the fastest growing suppliers to the United States," notes Rasmussen.

The majority of goods depart from the Port of Vung Tau, and arrive at the Port of Los Angeles. Ocean carriers Maersk Line, Mitsui, and Hanjin have large market shares of import transportation.

Top 10 U.S. Imports from Vietnam

1. Apparel, household goods—cotton
2. Apparel, textiles, non-wool or cotton
3. Furniture, household goods
4. Camping apparel and gear
5. Fish and shellfish
6. Footwear
7. Computer accessories
8. Green coffee
9. Nuts
10. Crude oil

TRANSPORTATION LIABILITY:

Busting Seven Common Myths

What you don't know about transportation liability can cost you big time. Learn fact from fiction before you tender your next load.

By Lisa Terry

TRANSPORTATION LIABILITY USED TO BE SIMPLER TO UNDERstand. Under traditional principles of U.S. federal transportation law, carriers were responsible for the freight until delivery. But today, with individual contracts negotiated between each shipper and carrier, it may not be clear who is responsible for transportation incidents such as cargo and property damage or injuries. As a result, plaintiff attorneys are increasingly moving up the supply chain – from carrier to broker, and possibly even shipper – for compensation.

In addition, the Federal Motor Carrier Safety Administration's (FMCSA) evolving Compliance, Safety, Accountability (CSA) program and Safety Measurement System (SMS) continue to confuse shippers. Do these safety programs impact shippers' potential liability? What actions should they take as a result?

All these developments are prompting shippers to pay closer attention to contract language and the details of shipper and carrier insurance policies. Learning the details of shipping liability isn't just for lawyers anymore.

Here are seven misconceptions some shippers hold about their liability status.

THE MYTH:

"CSA 2010/SMS is Law."

SOME SHIPPERS BELIEVE CSA 2010/SMS METHODOLOGY is law and, therefore, they are required to use it to verify their carriers' safety records.

Evidence of this misunderstanding is showing up in the actions of transportation insurance companies. When assessing insurability, some companies are beginning to consider whether a shipper includes CSA score verification as part of its shipping procurement methodology.

"Verifying CSA scores could be the difference between whether we will or will not insure the risk, particularly for cargo with high value or special handling requirements," says Robert Optiz, worldwide inland marine manager for the Chubb Group of Insurance Companies, Warren, N.J.

But CSA 2010/SMS methodology is not the law, and has not been approved for the FMCSA to use for rulemaking, contends a group of transportation trade associations represented by attorney Henry Seaton, partner in Vienna, Va.-based transportation law firm Seaton & Husk, LP.

Seaton represents petitioners in *ASECTT et al. v. FMCSA*, which seeks judicial affirmation that only the FMCSA is required to determine carrier safety. Shippers and brokers should rely on the agency's ultimate safety fitness determination for a given carrier, says Seaton. And, under existing laws, shippers and brokers are not required to second-guess the agency's ultimate decision (known as a safety rating) by monitoring SMS ratings. Under the laws of Congress, the Commerce Clause of the Constitution, and the doctrine of federal preemption, federal law trumps state law, Seaton asserts.

"Shippers should have no negligent selection liability under state law concepts when they choose a carrier the agency has determined is fit to operate on the nation's roadways," Seaton says.

ASECTT et al. v. FMCSA came about after the agency published guidance to shippers, brokers, and insurers on May 16, 2012, suggesting that SMS methodology should be used in credentialing carriers, and that safety ratings were not a reliable benchmark. ASECTT (Alliance for Safe, Efficient and Competitive Truck Transportation) is joined by 19 other named plaintiffs in the suit.

The plaintiffs cite that the agency itself "already affirmed in a settlement of a prior suit, *NASTC et al. v. FMCSA*, that unless a motor carrier in the SMS has received an unsatisfactory safety rating pursuant to 49 CFR Part 385, or has otherwise been ordered by the FMCSA to discontinue operations, it is authorized to operate," says Seaton.

Petitioners' opening briefs were recently filed in *ASECTT et al. v. FMCSA*, and two other logistics industry groups have filed supporting documents.

In the meantime, the FMCSA's actions have led to widespread misunderstanding about CSA 2010 and SMS methodology, Seaton notes. Many shippers erroneously believe that:

- CSA became law in December 2010.
- Shippers are required to use SMS methodology in credentialing carriers to avoid state law liability for negligent selection.
- SMS percentile ranking is an accurate predictor of carrier safety performance.

Shippers' mistaken belief that they are required to use SMS ratings creates several vexing liability issues, Seaton says. Among the questions raised are:

- How does a shipper use SMS methodology and maintain its best defense against negligent selection suits? Federal law trumps state law causes of action, and the settlement in *NASTC v. FMCSA* makes clear it is the agency's job—not the shipper's responsibility—to certify safety.
- If a shipper uses SMS methodology in credentialing carriers, how does it challenge the admissibility of any carrier score by the plaintiff's bar in a lawsuit?
- Because SMS percentile rankings will always arbitrarily find that more than half of the carriers it scores exceed one or more enforcement thresholds, how does a shipper use the scores without losing capacity and carrier choice?
- Because carrier percentile rankings change monthly and scores can fluctuate wildly–particularly for small carriers based upon single paperwork violations–how does a shipper use SMS methodology and still establish stable, long-term relationships with dedicated service providers?

SMS methodology is not the law, its use is contrary to shippers' best interests, and it can only heighten–not diminish—shipper liability, Seaton maintains. Shippers need to rely on their transportation legal counsel to determine the right stance as the logistics community awaits the outcome of *ASECTT et al. v. FMCSA*.

THE MYTH:

"Broker/carrier contracts are standard and will protect me."

WHILE MOST SHIPPERS NEGOTIATE CONTRACTS WITH their favored carriers, too many at the extremes take just a cursory look at the broker's or carrier's document, and assume it covers them. Or they go overboard, building into contracts clauses that exhibit excess control or violate laws. The contract could also be with a third-party logistics (3PL) provider, but technically, there is no such entity in the law called a 3PL. The party that procures transportation for you and does not own the equipment is either your agent or a broker.

"Shippers aren't really taking control of the transaction," observes Chubb's Opitz. "They ask a 3PL or broker to arrange for transportation, and they think that party has their best interests in mind."

But the first interest of any outside organization—broker, 3PL, freight forwarder, carrier, insurance company—is its own. That transportation contract may very well include a high deductible, limitations, and exclusions.

Another area to examine is bill of lading variations, such as compensating for a loss based on price per pound instead of total wholesale, retail, or replacement value; courts have varied widely on how they interpret contract terms such as a shipment's full actual value. That's particularly the case when shipping requirements are unique. Another issue is the use of subcontractors.

Most carriers offer a legal liability contract, which is different from a standard or general liability contract. "Not everything that could happen to goods, such as acts of God, is covered by a legal liability contract," Opitz says. So any claims would go toward the shipper's own insurance policy.

In addition, too many shippers are writing contracts without lawyers—or without lawyers specializing in transportation, says Ronald Leibman, counsel at Riker Danzig Scherer Hyland & Perretti LLP, Morristown, N.J.

As a result, important clauses could be left out, or written in a way that violates applicable laws. For example, Leibman recently saw a California-based Fortune 100 company's contract that contained anti-indemnification language that violated California law because that shipper, and perhaps its lawyers, misunderstood the intricacies of transportation law. Shippers sometimes think a single firm can handle all their corporate needs, including transportation-specific matters.

Too many shippers are writing contracts without transportation lawyers. Important clauses could be left out, or written in a way that violates applicable laws.

Contracts are not one-size-fits-all for any carrier, broker, or shipper. "There is no such thing as a standard clause, but there is standardization of concepts," says Leibman. "My transportation contract started in 1995 and has been through 75 iterations to refine its language and keep up with legal changes."

Laws such as the Carmack Amendment, which control and limit the liability of common carriers for in-transit cargo, are already in place to address some aspects of shipment. But a shipper moving an exempt commodity—fresh produce, for example—needs specific language about these liabilities because Carmack doesn't cover the goods. Requirements vary within a vertical market such as foods, or by transportation mode. And specific industries must also answer to agencies such as the FDA and USDA regarding shipments.

Shipper-carrier or shipper-broker-carrier contracts must be negotiated for each shipper's specific conditions, clearly spell out issues such as how a dispute will be addressed, and balance liabilities across the parties.

"Anyone who ships freight in any volume without a contract will have liability issues," says Leibman.

Liability, he says, is negotiable.

"Carriers are willing to expand a contract's normal terms to get business," says Opitz. "Carriers are taking a more all-risk approach to insuring their loads because shippers are demanding the carrier be responsible in all cases, not just legal liability."

He recommends shippers seek opportunities in terms of sale to shift liability to other parties as quickly as possible. For example, instead of the shipper being the responsible party from its warehouse to the purchaser's warehouse, the shipper is only responsible from warehouse to port.

THE MYTH:

"I can tell the carrier exactly how to ship my cargo."

SOME SHIPPERS TAKE THE OPPORTUNITY TO PUSH CONtracts to the extreme, dictating how the carrier should handle a shipment even after it leaves their possession. This opens the door to all sorts of legal complications, including the definition of legal relationships among the parties.

"Don't be overbearing; don't control in finite detail how the carrier and broker perform their roles," urges Joseph Swift, principal at Brown & James, a St. Louis, Mo.-based firm that advises insurers in transportation matters.

But not every attorney agrees. "You have the right to ask carriers to comply with the law, and generally control their actions when they're on your premises," says Riker's Leibman. "It's a big jump from a contract that says the vendor has to comply with federal wage law to one that says you are controlling that company's employees."

Another liability concern is ensuring the truck to be tendered is loaded correctly. Opitz advises shippers to implement good protocols for safe loading practices, and consider hiring third-party load surveyors to offer a second opinion on those practices.

THE MYTH:

"I have insurance, so I don't have to worry."

NO ONE WANTS TO BE SUBJECT TO A LAWSUIT THAT requires their insurer to pay out. But too many shippers regard their insurance policies as filling the gaps in the carrier's liability, or believe that the carrier's insurance is comprehensive and will cover the claim in all cases.

The array of a shipper's insurance policies must address cargo, injury, and property liability. Shippers who move products infrequently are sometimes unaware of the coverage they need. And sometimes the operations department doesn't realize that an exceptional shipment will fall outside the scope of the shipper's current insurance coverage. It's important for operations and risk management departments to work together to prevent that, notes Leibman.

The biggest misconception involving cargo insurance is that requiring a certificate of insurance is tantamount to having evidence of coverage, says Seaton. Almost all cargo policies have exclusions, and the best policies carriers can buy will, at best, meet their legal liability under the Carmack Amendment.

A shipper can ask for more, and may get it through broadly worded indemnity, or sole discretion to not mitigate damages, but "don't expect the carrier's insurance company to pay the claim, and you may bankrupt the motor carrier in the meantime," says Seaton.

Insurance terms must also fit your shipments. "You can have liability because you are uninsured or underinsured," says Leibman.

THE MYTH:

"If anything happens, my broker will cover it."

IN JULY 2012, CONGRESS PASSED THE MOVING AHEAD for Progress in the 21st Century (MAP-21) Act. Part of this extensive highway bill requires that brokers post a bond or other financial security of at least $75,000—up from $10,000—starting in mid- to late 2013. That change is intended to ensure that the broker has adequate funds to pay a carrier for a shipment or any lawsuit stemming from that shipment. This could reduce the chance that an unpaid carrier goes after the shipper for payment—even though the shipper already paid the broker.

Another important component of the legislation requires that brokers and carriers carry appropriate licenses; a transportation broker must bank at least three years of experience before being permitted to open a brokerage. These steps should help ensure that shippers are doing business with legitimate, qualified parties.

But what the measure doesn't do is eliminate the shipper's liability in the event of an accident, says Riker's Leibman. That's why it's critical to maintain sufficient insurance coverage for cargo, property damage, and injury claims. It's also important to ensure your brokers and carriers maintain sufficient coverage.

Fighting Back

Here are a few ways to stay on top of liability issues and protect your company's interests:

- Read the major cases and ask a transportation lawyer to interpret the results.
- Engage legal and insurance counsel with transportation expertise.
- Ensure your industry associations are taking action to protect shipper interests in transportation liability issues.
- Know what questions to ask potential transportation partners.

THE MYTH:

"Most truck drivers are independents, not employees."

SHIPPERS WHO USE OWNER/OPERATOR DRIVERS should pay close attention to movement in driver status, advises Leibman. Cases such as *Luxama v. Ironbound Express, Inc. et al.* and *Virginia Van Dusen, et al v. Swift Transportation* question whether dock workers and drivers should be considered employees rather than independent contractors. If they are deemed employees, then the contracting company becomes responsible to pay employment taxes, health care, and other benefits. The employment status has liability implications, as well. "It could create a new paradigm in how to run your business," Leibman says.

The Luxama v. Ironbound Express case took place in New Jersey, where organized labor has strongly advocated for new laws limiting the use of owner/operators. While the intermodal freight carrier was successful in this case, the court noted that the long and exclusive nature of the relationships between the carrier and each owner-operator, and the integral value of their services, tip the scales toward employee-employer relationship status. Those contracting with owner/operators need to take great care with their practices and contract language to maintain compliance with current definitions of employee versus independent contractor status.

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THE MYTH:

"International and domestic transportation liability are similar."

AS A GROWING NUMBER OF SHIPPERS EXPAND OPERATIONS across the globe, they may not be aware of the differences in applicable laws and treaties. Liability issues change considerably as a shipment crosses international borders, and differ by mode as well; some are guided by statute, others by industry practices.

In the United States, for example, motor carriers ordinarily impose liability limits of 50 cents per pound per article through their service conditions on domestic ex-air moves, Seaton explains. But for international ex-air shipments, the applicable international treaty limitation is typically extended inland. The treaty limitation set forth in the Montreal Convention (applicable to most industrial nations) is 19 Special Drawing Rights, which works out to be about $12 per pound per article.

Multiple international laws—such as the Carriers of Goods by Sea Act, the Foreign Corrupt Practices Act, the Hague Convention, and the United Nations Convention on Contracts for the International Sale of Goods (the Vienna Convention)—may govern the liabilities for a particular shipment.

Shippers doing business internationally "should contact their insurance company to provide adequate coverage for those goods in transit," says Chubb's Opitz.

As with any aspect of transportation, it's critical for shippers to select good broker, forwarder, and carrier partners by vetting them for financial health, safety record, security, communication, insurance coverage, and the ability to educate. International legal and insurance expertise is also vital.

"You may not know all the answers, but you need to know the questions to ask, such as your liabilities and protections throughout the supply chain," says Opitz. "Being engaged in the process is key."

Buyer Beware

Tendering shipments and taking deliveries is a routine part of daily business, but every load shipped has the potential to go wrong: an accident, theft, poor business processes, and more. While liability is rarely top of mind for those involved in procuring carriers, and building and tendering loads, the potential for major financial ramifications for shippers as a result of accidents and other events is growing. Legal experts urge those on the business side of the supply chain to keep up with the evolving legalities of transportation liability. ■

Nothing in this article should be relied upon as legal advice in any particular matter.


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LOCKING DOWN SUPPLY CHAIN SECURITY

When it comes to cargo security threats, each mode faces unique challenges. But thanks to technology and industry best practices, shippers can improve their ability to protect valuable cargo.

by Justine Brown

Security in the global supply chain is more important than ever. Driven by threats such as terrorism, piracy, and theft, it is also more complicated.

In January 2012, President Obama introduced the National Strategy for Global Supply Chain Security, a policy designed to promote the timely and efficient flow of legitimate commerce while protecting and securing the supply chain from exploitation, and reducing its vulnerability to disruption. The goal of the policy is to "resolve threats early in the process, and strengthen the security of physical infrastructure, conveyances, and information assets while seeking to maximize trade through modernizing supply chain infrastructure and processes."

Shipments moving by truck represent the highest cargo theft risk. Screening and inspection processes, paired with tamper-proof locks and seals, can thwart thieves.

While the national policy is a positive step, transportation service providers – as well as shippers – must also take precautions to protect cargo. Given each transportation mode's nuances and challenges, no one-size-fits-all solutions exist. Instead, understanding the challenges, studying best practices, and putting a comprehensive plan in place are critical components.

Protecting Over-the-Road Cargo

In the 1990s, most trucking-related cargo theft occurred in warehouses. In response, warehousing providers beefed up security substantially. Today, cargo is more likely to be stolen during transit.

"Cargo thefts most often occur when the vehicle transporting the cargo is stopped in an unsecured location," says Bill Boehning, corporate director security at Springfield, Mo.-based motor carrier Prime Inc., and Transported Asset Protection Association (TAPA) board member. "Freight at rest is freight at risk."

Eighty-five percent of all major cargo theft involves trucks, according to TAPA. Those thefts cost businesses more than $10 billion annually worldwide.

"Trucking presents more opportunities for unauthorized access than other modes," says Taya Tuggle, logistics and compliance manager for San Francisco-based third-party logistics (3PL) provider AG World Transport. "You can build a lot of security into warehouses, but when freight is moving, it's more challenging."

Common areas where theft occurs include truck stops, unsecured drop yards, and restaurant or shopping center parking lots. Geography also plays a significant role. Twelve states—including California, Georgia, Florida, Texas, Tennessee, New York, and Illinois—account for 80 percent of all U.S. freight theft among all transportation types.

"The risk shippers face changes dramatically from region to region," says Boehning. "No matter where their cargo is traveling, shippers need to keep their presence in certain high-risk areas to a minimum, and not leave cargo sitting unsecured for any significant period.

"Any time cargo sits, it is vulnerable," he adds.

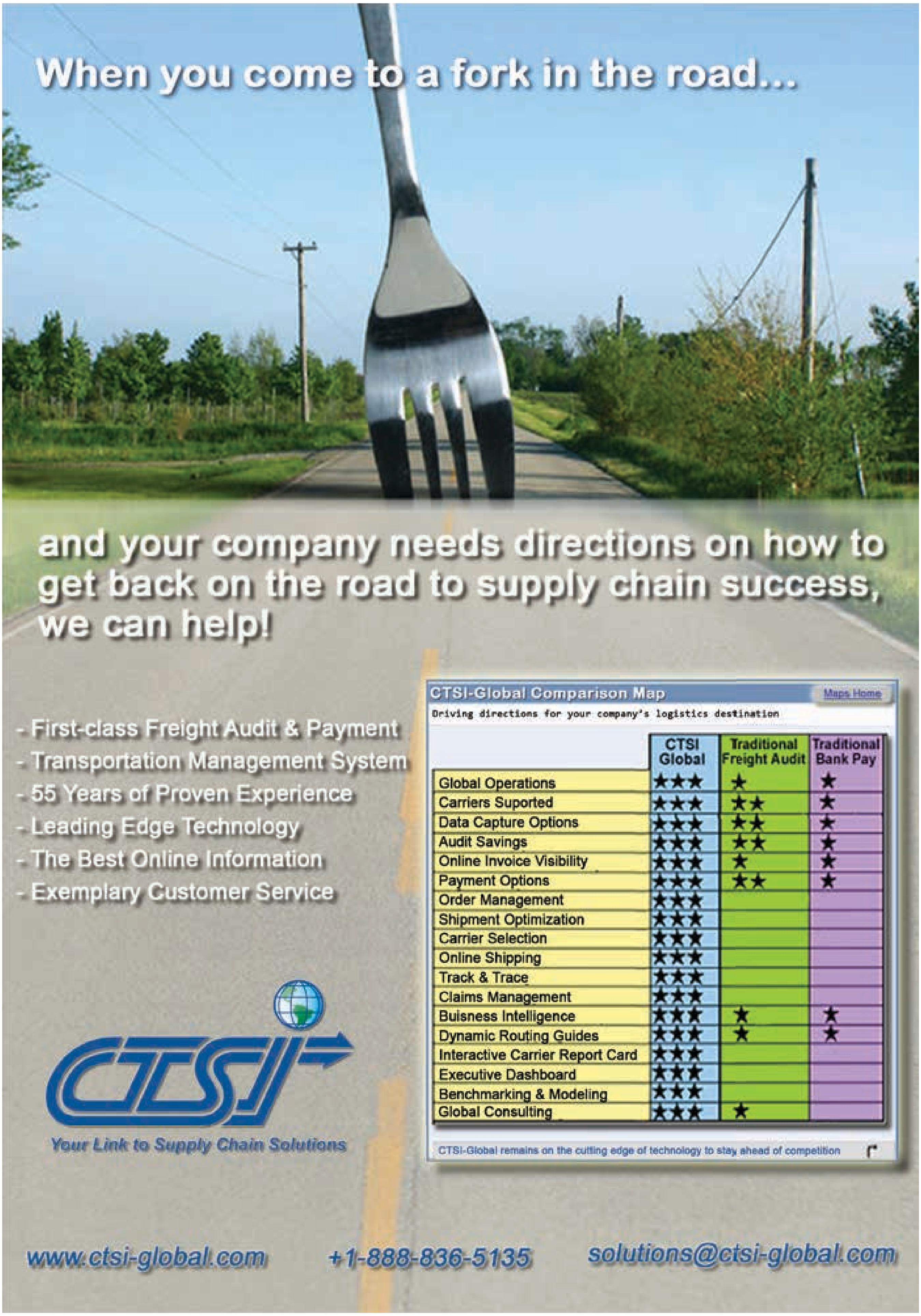
In 2011, TAPA announced the first trucking security certification program for motor carriers and logistics service providers in the United States and abroad. TAPA designed the program to help trucking companies transporting high-value goods targeted by cargo thieves ensure the safety of the freight they are handling.

As of January 2013, three companies have been certified, according to Boehning.

Rail and Hazardous Materials

Recent terrorist attacks on rail systems in Madrid, London, and Mumbai have highlighted rail's vulnerability. In the United States, a large percentage of the 160,000 miles of railroad track transports freight, including highly toxic chemicals.

"Freight rail is an essential element of chemical security," says P.J. Crowley, a homeland security expert at the Center for American Progress, an educational institute based in Washington, D.C.



	CTSI Global	Traditional Freight Audit	Traditional Bank Pay
Global Operations	★★★	★	★
Carriers Suported	★★★	★★	★
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Online Shipping	★★★		
Track & Trace	★★★		
Claims Management	★★★		
Buisness Intelligence	★★★	★	★
Dynamic Routing Guides	★★★	★	★
Interactive Carrier Report Card	★★★		
Executive Dashboard	★★★		
Benchmarking & Modeling	★★★		
Global Consulting	★★★	★	

The Freight Rail Security Grant Program provides funding to freight rail carriers, railroad car owners, and owners of rail bridges to protect critical surface transportation infrastructure from acts of terrorism, major disasters, and other emergencies.

The Federal Railroad Administration, meanwhile, employs 415 inspectors who ensure rail freight conforms to federal regulations for transporting hazardous materials. Those regulations require rail carriers to implement security plans, including special training for their employees.

Additionally, some chemical companies have begun opting for less-hazardous alternative chemicals. For example, for a nominal cost difference, water treatment facilities can use liquid bleach in place of chlorine, and refineries can replace hydrofluoric acid with the less lethal sulfuric acid.

"Reducing the need for some of the most dangerous chemicals lowers the risk of their release, either by accident or sabotage," says Crowley.

Setting Common Air Cargo Standards

Air freight represents approximately 40 percent of the value of global trade. How best to screen air cargo for the presence of explosives or other threats without paralyzing commerce has been a hotly debated issue, particularly because different countries follow different protocols.

The United Kingdom's approach, for example, focuses on ensuring that cargo, once it has been screened at its point of origin, cannot be tampered with at any point along its route. The U.S. Transportation Security Administration (TSA), on the other hand, imposes strict protocols at the last point of departure to the United States—regardless of whether the cargo had been previously screened in another country—and requires air carriers to guarantee that the cargo has been screened according to TSA standards.

In the past, this required air carriers and shipping agents to physically separate U.S.-bound cargo in airport warehouses for special processing. This method resulted in duplicate sets of paperwork, and often required that parcels be scanned by two sets of similar X-ray equipment to comply with both systems' technical standards. The additional compliance costs were often passed on to customers in the form of higher shipping rates. And the extra handling procedures increased transit times.

On June 1, 2012, however, the United States and the European Union announced an agreement to recognize each other's air cargo security procedures, putting an end to a costly duplication of security controls. More than $130 billion in air freight crosses the Atlantic from Europe each year. Mutual recognition is expected to reduce costs and improve shipment speed and efficiency.

Training personnel on cargo security procedures and policies helps promote supply chain risk management awareness.

Ports of the Future

U.S. ports require an uninterrupted flow of commerce. An underwater threat or attack is likely to stop port operations, leading to major shipment delays and financial losses.

America's seaports are safer than they were when Congress passed the Maritime Transportation Safety Act in 2002, according to Bethann Rooney, a member of the American Association of Port Authorities' (AAPA) Security Committee, chairperson of the AAPA Port Security Caucus, and security manager at the Port Authority of New York and New Jersey. She testified on behalf of the AAPA before the U.S. House Transportation and Infrastructure Committee's Subcommittee on Coast Guard and Maritime Transportation.

In her testimony, Rooney was quick to note, however, that major challenges still exist in areas such as fully funding the federal Port Security Grant program, upgrading Department of Homeland Security (DHS) threat detection equipment at ports, and completing the Transportation Worker Identification Credential card reader evaluation and testing process.

The key to enhancing and maintaining ocean cargo protection measures is the Port Security Grant Program, Rooney says. Since its inception, the program has provided more than $2.7 billion in grants to enhance port security. But in the past few years, Congressional support for all Homeland Security grants, including the Port Security Grant Program, has eroded.

In fiscal 2012, Congress appropriated $1.3 billion for all Homeland Security grants—a 40-percent cut over the previous year—and gave the DHS secretary authority to determine the final funding level for each individual program. Only $97.5 million was allocated for port security in fiscal 2012.

Newer technologies may help ports improve security without requiring huge

investments. For example, real-time 3-D sonars are enabling more efficient survey methods. Currently, most sonar imaging supplements hand-over-hand underwater inspections. The sonars allow divers to survey a perceived underwater improvised explosive device in minutes, for example, as compared to several hours manually. Security officers can then take immediate action to remove the threat.

New 3-D real-time sonars have dramatically improved image clarity and resolution in even the most demanding acoustic environments. The sonars allow ports to conduct routine detailed surveys of critical infrastructure, identify parasitic devices on vessel hulls, and map submerged hazards to navigation.

Technology Tools

The terrorist attacks of Sept. 11, 2001, and the creation of the DHS, prompted both the public and private sectors to commit to developing new supply chain security technologies.

"These endeavors have resulted in new systems that make trade not only more secure, but also more efficient and cost-effective," says Ed Harrison, chairman of the Cargo Intelligence and Security Association (CISA). "Through discussions in the United States, EU, and elsewhere, governments and industry are becoming more aware of the economic and security benefits these systems offer."

CISA was formed to facilitate a public-private dialog on supply chain technology. Such conversations are vital because progress in this field is occurring so quickly that technology is getting ahead of laws and policies drafted decades ago.

Technology companies are developing faster, more advanced techniques that offer more detailed data, and systems that provide shippers real-time container tracking are improving each year. New technologies also allow shippers to monitor containers for tampering, and determine whether they contain dangerous cargo.

"There is no excuse for not using the available technology to support supply chain security," says Tuggle. "Tracking and access control are integral parts of security, and technology can easily provide those capabilities."

Meanwhile, the Flanders Institute for Logistics recently released a report chronicling a multi-year test using technology to establish secure trade routes. "This initiative serves as proof that broader use of security systems can assist governments, and save time and money for the trade industry," says Harrison. "The DHS and the World Customs Organization have started similar supply chain technology programs."

But more technology is not always the solution; it depends on the situation at hand. "The market is moving toward technology, but there will always be a place for low-tech solutions, too," says Brian Lyle of Cambridge Security Seals, a Pomona, N.Y., supplier of loss prevention seals.

Shippers must balance their security investment with the value and volume of the items they are shipping. "Expensive high-tech solutions may not always be the answer," Lyle notes.

Best Practices

The foundation of a robust supply chain security plan and program is comprehensive and accurate risk assessment. Once shippers conduct an assessment, they can devise a security plan.

Typical supply chain security activities should include:

- Credentialing of supply chain participants. Take care to select transportation partners who can help analyze any security problems that arise, mitigate the incidents, and prevent them from happening again.
- Screening and validating the contents of cargo being shipped.
- Sending advance notification of the contents to the destination country.
- Ensuring cargo security while in transit via the use of locks and tamper-proof seals.
- Limiting access and exposure within the supply chain. It is critical to restrict workers' access to only what is necessary to perform their jobs, and to monitor that access for inappropriate use.
- Inspecting cargo on entry.
- Performing supply chain risk management awareness and training. A strong risk mitigation strategy cannot be put in place without training personnel on policy, procedures, and applicable management, operational, and technical controls and practices.

Focus Points

The more data about shipment status supply chain partners can record and access, the more secure their cargo will be.

"Ensuring cargo security requires creating an audit trail," says Lyle. "The challenges in the market require maintaining shipment integrity."

"Chain of custody is important, as are documentation and tracking devices—knowing where your goods are and who has them at all times," says Tuggle. "Also, make sure vendors meet your security standards, which are a vital part of cargo security. If you don't have a clear set of standards, how can you expect vendors to comply?"

Tuggle recommends developing explicit vendor shipping requirements that include clear non-compliance consequences. Equally important is a comprehensive security training program, both internally and with partners.

If a security breach does occur, it's important that shippers have policies in place for handling investigations so they can find root causes and use the incident as a learning tool.

Companies should also familiarize themselves with local and national law enforcement agencies. Taking the time to meet these agencies—specifically the personnel involved with investigating cargo theft—is important for recovering product and assets. Several states have their own cargo theft task forces.

Overall, all supply chain partners that bear the burden of cargo should be involved in the security process as much as they can, as they all share in the monetary loss if cargo is destroyed or lost.

"Data quality and reliability are vital," says Harrison. "Shippers all have the same need for security. Effectively combining security solutions, intelligence, law enforcement involvement, and analytics is the key to ensuring supply chain security." ■

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LOADBOARDS & EXCHANGES

FINDING THE PERFECT MATCH

SHIPPERS SEEKING CAPACITY AND CARRIERS LOOKING FOR FREIGHT FIND LOVE AT FIRST SITE.

BY MARTY WEIL

Shippers and carriers are meeting on electronic loadboards and exchanges, which act as Web-based bulletin boards for the transportation industry. Shippers, carriers, brokers, and third-party logistics (3PL) providers use loadboards to communicate opportunities, whether it's freight to be shipped or a truck to be filled.

"Shippers with product to move have a list of carriers they use regularly," says David Schrader, senior vice president, operations, for Beaverton, Ore.-based DAT TransCore; the company's Network is among the industry's largest loadboards. "But if those carriers are not available, they must find other providers, or give the load to a broker or 3PL, who then has to find the capacity.

"Loadboards provide a marketplace where shippers can post freight; then carriers with capacity can effectively look for freight that matches their specific service — dry van, flatbed, reefer, or specialized transport — moving from the origin to destination they need to travel," he adds.

The spot market's size is considerable. Trucks move about 70 percent of all freight; 15 to 20 percent of that is in the spot or exception market, which is what loadboards handle. "The spot market represents a small percentage of truck freight, but it's a very large number," Schrader says. "We post tens of millions of loads on the DAT marketplace annually."

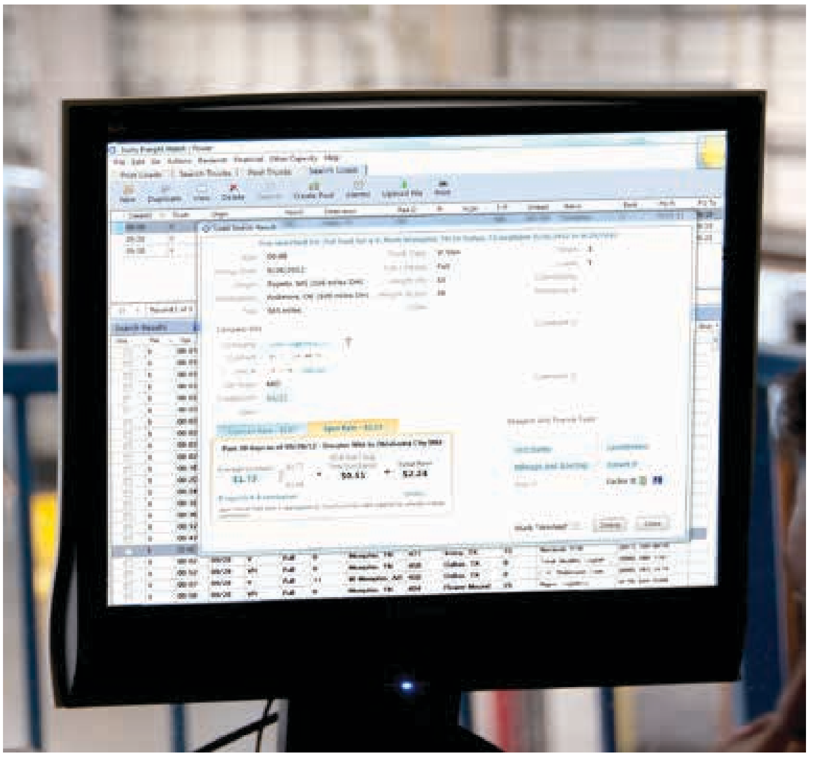
Facilitating Trade

Loadboards provide more than just a measure of supply and demand. By delivering information on all parties involved, they create a collaborative marketplace that facilitates trade.

"The large number of shippers and carriers using loadboards illustrates just how effective they are in moving freight," says Joe Beacom, chief, safety and operations, at Jacksonville, Fla.-based Landstar Systems, a logistics services and supply chain solutions provider. Landstar hosts its own loadboard to help customers find the best way to move their goods. The board is public, and free to carriers and Landstar customers.

Because shippers in the spot market might be doing business with a carrier they've never worked with before, the loadboard should provide some essential information. Shippers need to know:

- If the carrier has the proper authority to carry the freight.
- The level of insurance the carrier holds, and if it's adequate for the value of the load.
- Safety information tied to Federal Motor Carrier Safety Administration requirements: What is the owner/operator's safety record? Does the carrier have any regulatory or governmental issues?



DAT TransCore's 3sixty Freight Match loadboard helps shippers, brokers, and carriers find the right trucks and loads quickly and efficiently.

Carriers need to know:

- If the shipper is reputable.
- Whether the shipper pays within a reasonable time.

Effective loadboards deliver all this information, along with specific load details, when a shipper or carrier conducts a search.

"Both parties want a safe and secure transaction," says Schrader. "Carriers want to get paid fairly and quickly. Freight owners and 3PLs want their freight picked up and delivered on time, and in the right condition. To facilitate the process, we vet newcomers to the DAT marketplace before they become participants."

Choosing a loadboard is a matter of relationships, says Beacom. "Because technology is the lowest hurdle, many loadboards are available. But what makes a loadboard effective is trust," he notes. "Carriers can't go to 100 different loadboards every day, so they go to ones that have established trust with marketplace participants."

Sealing the Deal In the Digital Age

Traditional loadboards operate on a first-come, first-served basis. Matches may happen one or two minutes after a posting lands on the board.

"As soon as a posting hits and contact information is revealed, it's a race to the phone," says Eileen Hart, assistant vice president of marketing and product management at DAT TransCore. Most carriers want personal contact with freight owners before the deal is done; this usually means a phone call, negotiations, then a contract exchange. The dynamic is personal and collaborative, and doesn't happen electronically.

That collaboration makes traditional loadboards similar to a dating service for loads and trucks: shippers list loads, truckers search and find one that fits their needs, then the two parties negotiate price and terms. Posting and searching occur online, and the negotiation and acceptance are completed over the phone. Once the agreement is made between the parties, the rest of the transaction takes place offline.

But even this process is changing as the digital world continues to grow.

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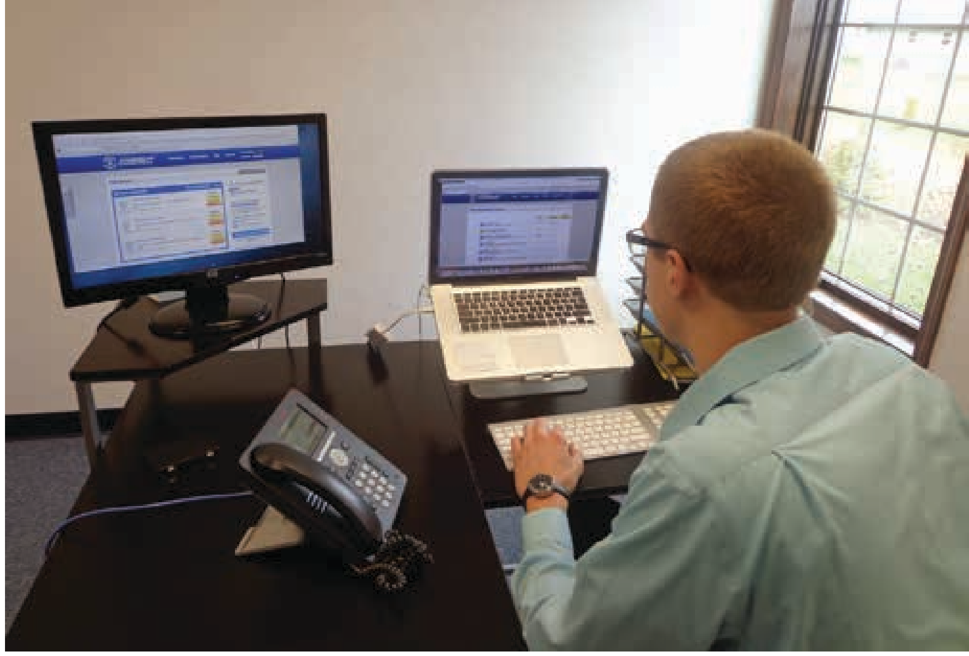
"On some electronic load exchanges, the entire transaction takes place online," notes Matt Chasen, founder and CEO of Austin, Texas-based loadboard uShip.

Load exchanges are similar to loadboards in that they display posted loads, and truckers search for ones that fit their needs. Once truckers find the right load, however, they can either take the load at the fixed price shown, or bid on the load in competition with other carriers.

"The goal is to offer a high percentage of loads at a fixed price, provided the shipper or broker does a good job of pricing at market rates," says Chasen. "Bidding only occurs when a load is in an infrequent lane, or the market pricing is simply not known."



Shippers using the FreightConnection loadboard can open their business to daily competition. Carriers bid for shipments based on their changing needs, creating an efficient load exchange platform.

The shipper or broker can automatically tender the load to a carrier, or the carrier can take the load through an auto-acceptance process. Once the load is accepted, the remaining processes — such as document exchange, check calls, payment, and shipper and carrier ratings — also take place online. This gives both parties access to load-specific information they can use for routine reporting, pricing, and due diligence.

"Due diligence regarding risk assessment is important to make load exchanges work," says Chasen. "A number of shipper and broker credit reporting and carrier monitoring services aid in the risk-assessment process. But the shipper, broker, or carrier always makes the final decision whether or not to accept a load."

Benjamin Best Freight (BBF) uses loadboards regularly. The West Chester,

Ohio-based less-than-truckload (LTL) regional carrier handles and services larger partial shipments on a direct-drop basis, with non-stop service to customer docks. BBF uses FreightConnections, a Menasha, Wis.-based loadboard.

"One employee is dedicated to going to the site daily," says Jeff Bentley, vice president of sales at BBF. "It's a perfect tool to find lanes we need."

In addition to finding loads, BBF uses FreightConnections to manage assets. "If we have a truck on the West Coast, we might take a load on the board at cost to move that truck back to Ohio," Bentley says. "Or if we need to move a truck west, and see a post for a 20,000-pound load going to Portland, we might be very aggressive on pricing to move it."

BBF has been using the loadboard since the first quarter of 2012, and it has been a money saver. "We saw the loadboard concept and jumped on it," Bentley notes. "The key for us is the margin. Our salespeople also call on 3PLs, but going direct to the shipper saves money."

Some shippers use loadboards for more than saving money. American Signature, a Columbus, Ohio-based furniture manufacturer and retailer, for example, uses FreightConnections to expand its carrier base.

"We go to the loadboard to find carriers we don't know about," says Bryan Beam, CEO of American Signature. "We can find carriers servicing particular lanes where we are searching for capacity."

Constantly making new carrier connections is good business practice — the more carriers you are familiar with, the more likely you are to find one that needs your freight for a backhaul. A backhaul can translate to better service and a competitive rate.

"Loadboards provide a collaborative tool to foster direct connections and relationships between shippers and carriers," Beam says. "Because FreightConnections does not allow brokers or third-party freight management companies on its loadboard, shippers can trust that the carriers they deal with through the site are truly asset-based providers."

Arlington, Texas-based carrier and broker Provision Logistics initially tried the uShip load exchange out of curiosity, but it has now become an increasingly important tool.

"We have gotten progressively better at using the site," says Douglas Guy, director, Provision Logistics. "We use it mostly for consumer business — small businesses that frequently buy from government liquidations or auctions. Large carriers often don't have pricing to fit their needs, but we can leverage our rates to serve them. While we also use traditional loadboards, uShip introduces us to a segment of customers we wouldn't have otherwise found."

As an example, Guy cites a recent transaction. A customer in Mexico wanted a 6,000-pound die cutter taken apart at a community college in Pinellas County, Fla., and shipped to Eagle Pass, Texas. The customer couldn't find a carrier to take the load, so it posted on uShip. Provision Logistics found the load, and was able to service the customer — it disassembled the machine, and loaded it on specialized pallets for the move.

"We made a fair profit, but we were significantly less expensive for the shipper than a large carrier would have been," says Guy. "This is a good example of the load exchange dynamic. If this customer had called a large carrier, it would have been left on its own to dismantle, package, and palletize the die cutter. The online exchange is ideal for situations where a shipper needs a solution, not just a shipment moved."

PLAYING MATCHMAKER

A few of the many loadboards and exchanges that help match shipper needs with carrier capacity.

123loadboard.com	**FreightConnections.com**
3sixty Freight Match	**Freightquote.com**
CarrierCentral.com	**GetLoaded.com**
DAT.com	**PickaTruckload.com**
DirectFreight.com	**TruckersEdge.net**
FindFreightLoads.com	**uShip.com**

Actionable Information

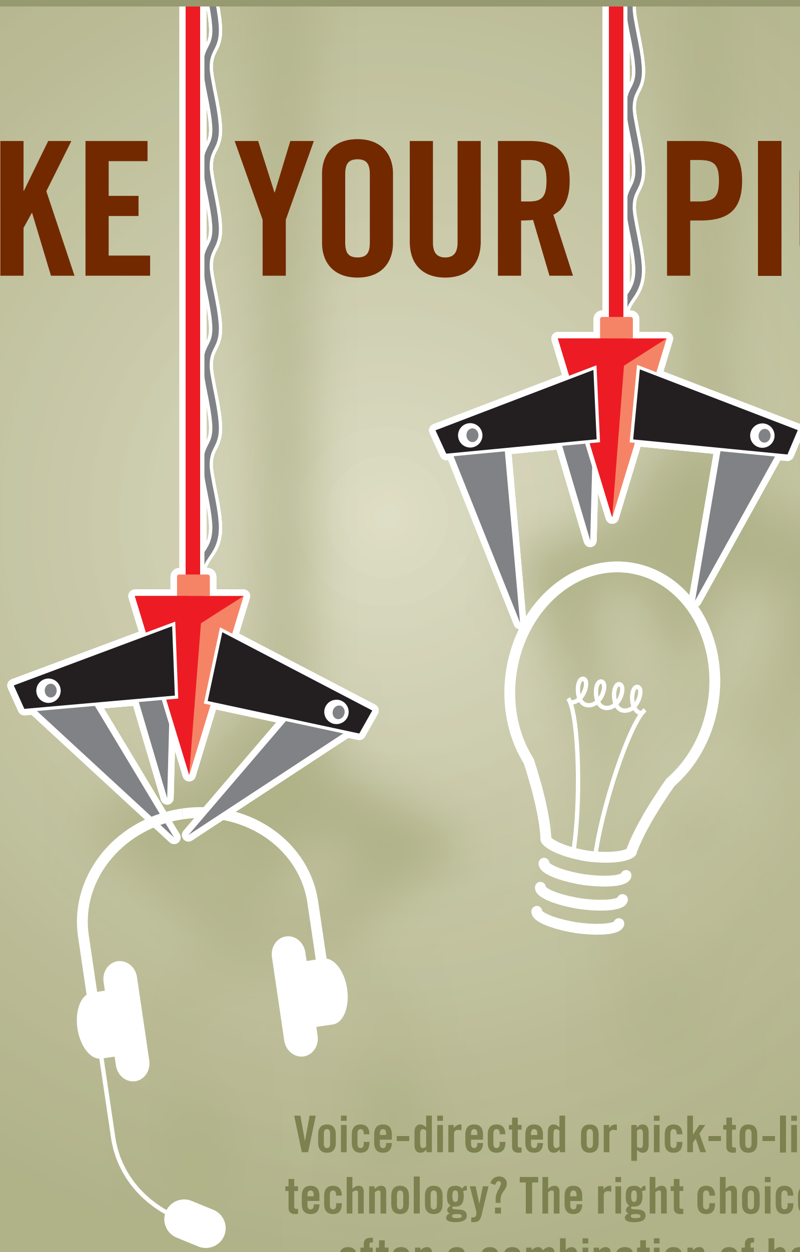
In addition to helping shippers and carriers share more information, electronic loadboards also enable them to act faster and more efficiently. "Loadboards increase the number of access points, as well as the quantity and quality of data," says Ken Harper, director of marketing at DAT TransCore. "Data is becoming actionable information. The spot market business is no different from any other business that uses data to help drive it."

"In the near future, loadboards will feature more analytic tools," adds Schrader. "Being able to see supply and demand on a particular lane at a particular time, for example, gives users insight into how aggressive they need to be in setting rates or conducting negotiations."

DAT has already developed analytical tools such as its Truckload Rate Index, which helps participants benchmark what they are paying or receiving versus where the market is currently priced. The end result is more efficiency.

"One reason we've seen such an increase in the spot market — and loadboard activity — is because it is an efficient way for supply and demand to get together," Schrader concludes. ■

TAKE YOUR PICK



Voice-directed or pick-to-light technology? The right choice is often a combination of both.

by Beth Stackpole

The hard and fast rule for deciding between voice-directed picking and pick-to-light technologies is this: There is no hard and fast rule. Companies looking to automate and modernize this critical warehousing function must consider a range of factors — from the size and scope of the facilities to the type of products and picking strategies involved. The resolution often results not in an either/or choice between the two technologies, but rather in a strategy that incorporates both.

London Drugs uses a combination of voice-directed and pick-to-light solutions to help boost pick accuracy.

Although manual, paper-based processes are still in play at many warehouse and distribution centers, the picking function is increasingly a candidate for automation in light of companies' continued struggle to cap, if not reduce, operating expenses. With customer retention a priority, particularly in a challenging economic climate, organizations are doing all they can to bolster customer service. That means putting in place an infrastructure that ensures the right products expediently get to the right customers.

That level of order accuracy isn't possible with paper-based processes, contends John Casagrande, vice president of client services at Voxware, a Hamilton, N.J.-based provider of voice-directed picking technology.

TAKE YOUR PICK: THE CHOICE OF VOICE

With 38 locations across the country, and more than 22,000 SKUs encompassing small products such as cleaning supplies to large items including air handling systems and furnaces, HD Supply Maintenance Solutions knows a thing or two about product diversity and the need for flexibility in its warehouse and operational systems.

That's why the provider of maintenance, repair and operations products to owners and managers of multi-family, hospitality, educational, and commercial properties quickly settled on voice technology when it embarked on a program to replace paper-based systems and automate its picking processes in conjunction with a major upgrade to its warehouse management system, according to David Wilson, the company's vice president of operations.

Depending on the specific size and scope of the facility, and the type of product, HD Supply picks orders in four different ways. Smaller items in large distribution centers are picked by zones, using carts, totes, and conveyors (pick-to-tote); in smaller DCs those same items are handled with a pick-to-cart approach. Larger items that can't be combined with other products are retrieved via pick-to-pallet techniques along with case and break-pack strategies.

"Ideally, we wanted one solution that could handle all four environments," says Wilson, who orchestrated the implementation of Lucas Systems' Jennifer voice picking solution as part of the warehouse project. "Today, we can pick every order using voice, whether it's done via a cart, tote, or other equipment. That was the tipping point in making the decision."

Beyond the different picking strategies, Wilson also wanted to invest in a technology that had legs for different warehouse functions, not just the picking application. Now that the company is wrapping up the picking implementation, it is planning a second phase where it will apply voice to replenishment and receiving functions, and over time, possibly use it for cycle counts and loading trucks.

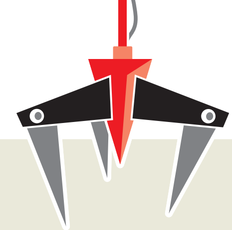
"Voice provides more flexibility in terms of additional applications," Wilson says.

The choice of voice came down to a simple matter of price for McGraw-Hill Education. Because the book publisher stocks anywhere from 120,000 to 130,000 titles, pick-to-light was cost-prohibitive.

"With 120,000 ISBNs at $100 a face for lights at every location, we were looking at a $12-million investment, which was far more than we spent on voice," says Michael Torch, the company's vice president of operations and manufacturing.

The company ended up implementing Voxware's voice solution across five distribution centers for picking and replenishing loose picks. To date, it has realized an 18-percent productivity boost on each of those tasks.

"I attribute the productivity gain to the hands-free aspect of voice—that was our big win," Torch says.



TAKE YOUR PICK: THE GUIDING LIGHT

Kubota Canada Ltd., a global manufacturer of tractor and utility vehicles based in Markham, Ont., makes this promise to customers: It is committed to keeping parts available for 20-plus years. However good for customers, that promise presents quite a challenge for managing and automating the company's 60,000-square-foot parts distribution center, which stocks an inventory that has surged to more than 78,000 SKUs and operates as a single warehouse serving 150 dealers and 20 original equipment manufacturers.

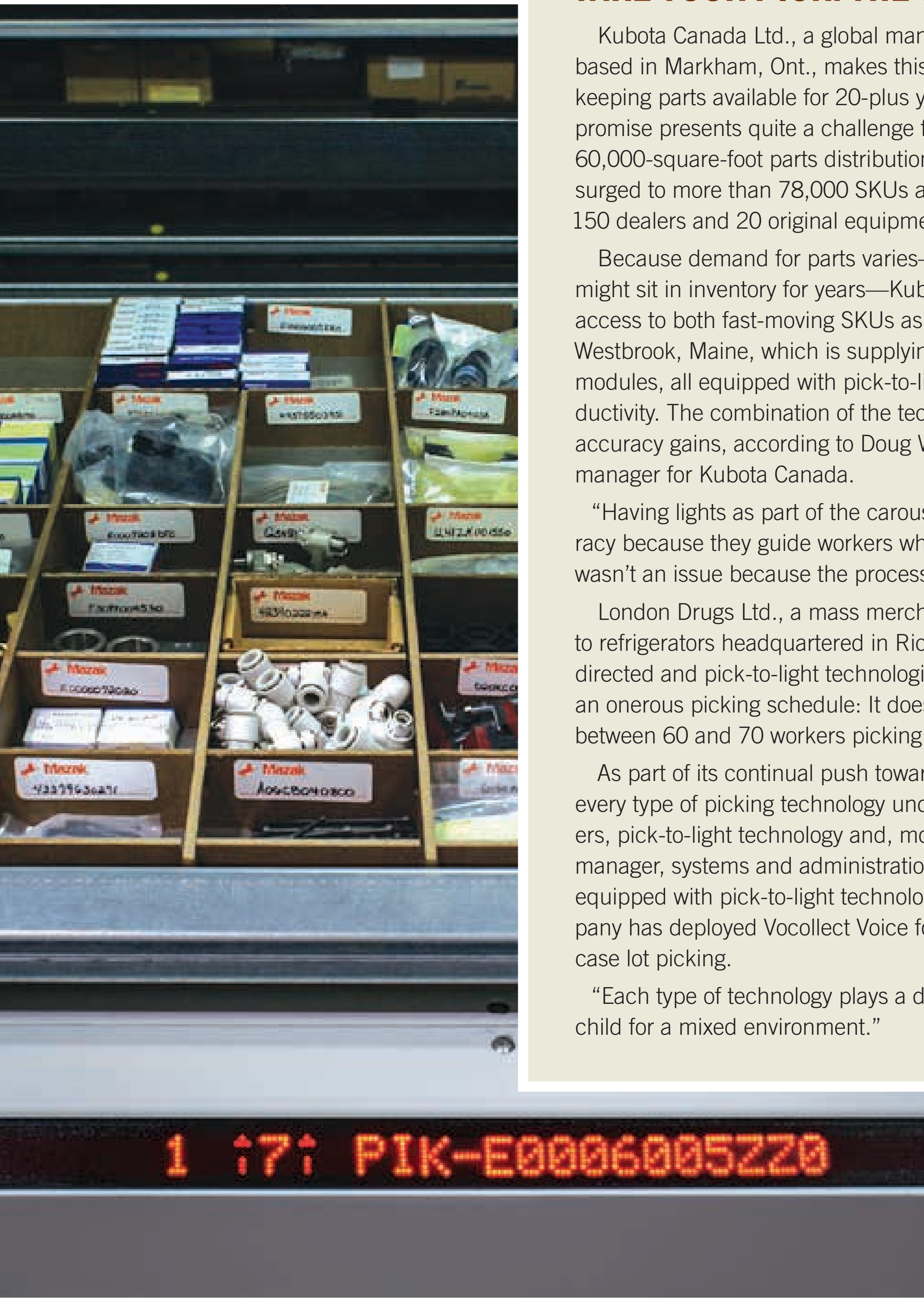
Because demand for parts varies—some are in constant demand, others might sit in inventory for years—Kubota needed a strategy that would ensure access to both fast-moving SKUs as well as shelf-sitters. Enter Kardex Remstar, Westbrook, Maine, which is supplying horizontal carousels and shuttle vertical lift modules, all equipped with pick-to-light technology to help bolster worker productivity. The combination of the technologies delivers productivity and inventory accuracy gains, according to Doug Ward, CITT national distribution and logistics manager for Kubota Canada.

"Having lights as part of the carousels and vertical lifts provides great accuracy because they guide workers where they need to go," Ward explains. Training wasn't an issue because the process involves no manual interference, he adds.

London Drugs Ltd., a mass merchandiser of everything from pharmaceuticals to refrigerators headquartered in Richmond, B.C., sees a need for both voice-directed and pick-to-light technologies in the warehouse. The company has an onerous picking schedule: It does an average of 100,000 picks a day, with between 60 and 70 workers picking 24 hours a day, six days a week.

As part of its continual push toward automation, the company "employed every type of picking technology under the sun — including carousels, conveyers, pick-to-light technology and, more recently, voice," says Lothar Breuers, manager, systems and administration for London Drugs. In addition to carousels equipped with pick-to-light technology for handling piece pick items, the company has deployed Vocollect Voice for additional piece picking, as well as for case lot picking.

"Each type of technology plays a different role," Breuers says. "We're the poster child for a mixed environment."



Pick-to-light is often the preferred method of automation for high-density picking environments of smaller products and small picking areas or zones.

"Companies still using paper picking processes often incur high order checking and auditing costs," he explains. "That's just additional overhead, not to mention the rework when a product needs to be repacked or put back.

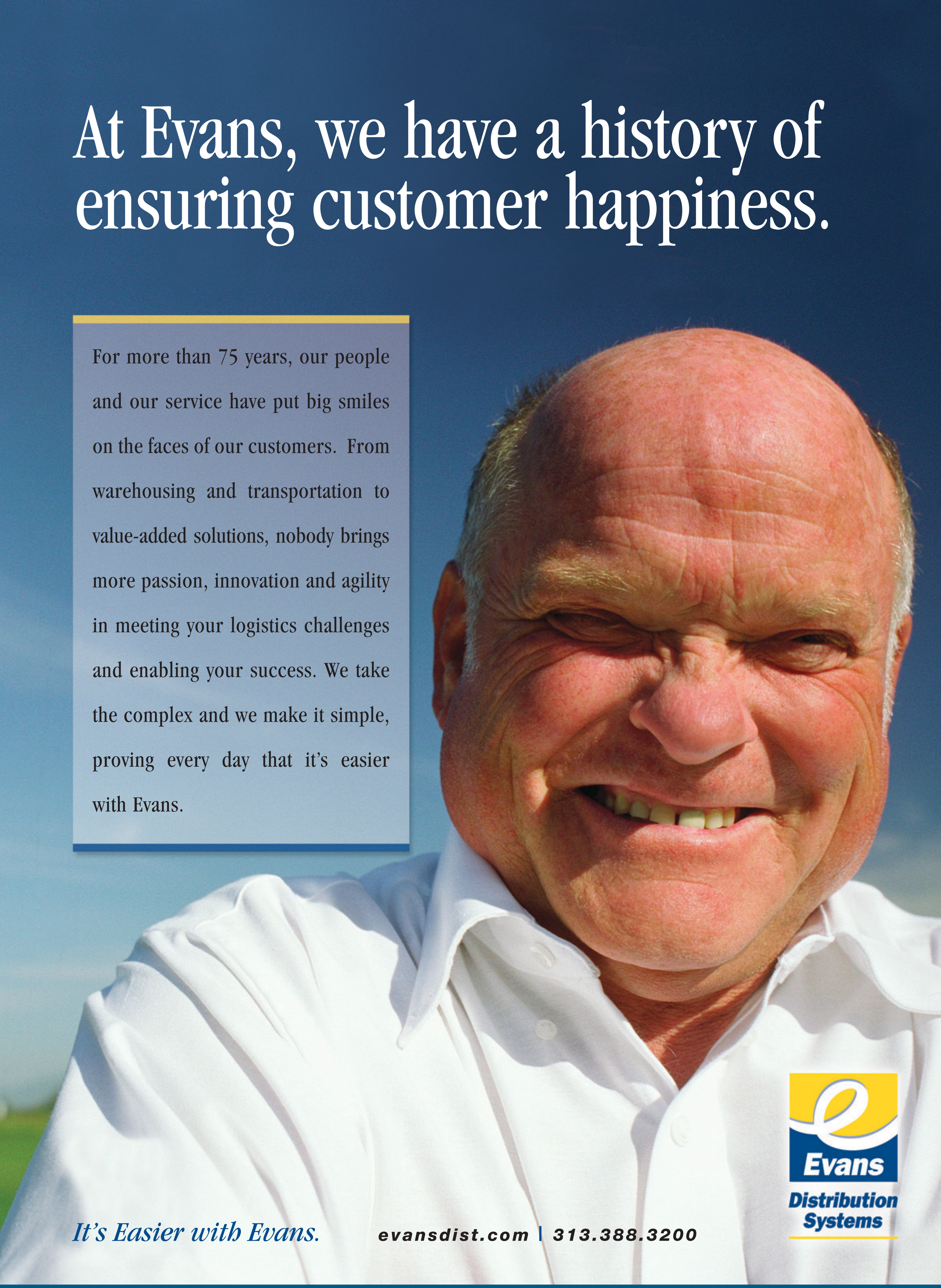
"Paper-based processes can be relatively fast, depending on the situation. They can be decent from a productivity standpoint. But they always suffer from an accuracy standpoint," Casagrande adds.

Addressing the challenge by adding more people to the picking operation isn't the most cost-effective solution for improving accuracy or increasing order-processing speed.

"Companies with manual environments add labor to increase throughput, but that simply balloons the cost," Casagrande says. "As companies with labor-intensive environments or complicated picking strategies evaluate their operations, they look for solutions that provide the flexibility to improve throughput while reducing labor costs."

PICKING TECHNOLOGIES AT WORK

Those solutions come in the form of two different picking strategies—the more established pick-to-light capabilities and voice-directed picking, which has gathered steam over the past few years and has greatly matured from a technology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standpoint. Both solutions promise significant benefits over paper-based picking processes, including increased worker productivity and fewer picking errors. Picking accuracy can be improved to up to 99.98-percent levels, while individual operator productivity can be boosted upwards of five times over what's possible with traditional manual picking solutions, according to independent studies and technology vendors.

Pick-to-light systems, which have become a staple in distribution centers and warehouses over the past several decades, promote efficiency via the use of lights to direct picking activity. The flashing light displays are mounted on shelving units, case flow, and storage racks -- or on machines such as vertical shuttles and carousels -- to direct workers to the items and quantities they need to pick, and where they need to physically place the picked materials.

In a typical pick-to-light operation, the warehouse management software or master materials management package issues a set of orders, and the pick-to-light subsystem determines the optimal picking sequence for each. Next, it transmits a signal to the light modules on the equipment, which then display a set of directions to guide individual operators in their picking tasks. The header display unit provides detailed data on pick quantity and the specific carton or tote to place the product. When finished, the operator presses a button on the light display to confirm the pick task is complete, and the software verifies that the correct item or items have been picked.

In comparison, voice-directed picking employs standard mobile devices or a small voice-supported terminal, along with headsets equipped with microphones to keep operators' hands and eyes free as they go about their picking tasks. Unlike RF scanners, pick-to-light systems, or even paper-based processes, which require the operator to read, scan, or punch keys to orchestrate a pick, operators using voice-directed solutions receive picking instructions through the headset, which communicates with the host system via a wireless connection to retrieve and issue its command sequences.

Similar to pick-to-light systems, voice solutions interface with a host warehouse management system (WMS) or enterprise resource planning (ERP) system, which create and deliver the picking assignments. After workers securely sign on to the voice solution, they receive their individual picking instructions via easy-to-understand voice prompts as to where to go, how much to pick, and where to physically place products as part of the order.

One advantage of a voice solution is the interactive dialogue and use of check-digits—a code the picking operator uses to acknowledge a specific instruction, such as how many items were picked, or that the right products were picked based on a set of numbers pulled off the pallet or location.

Both pick-to-light and voice solutions have key strengths and weaknesses. The choice boils down to price, flexibility, and specific company requirements.

THE GOOD, THE BAD, THE UGLY

For years, the relative immaturity of speech-recognition technology, and the fact that many early voice-picking systems primarily voice-enabled existing paper or RF-based workflows, gave pick-to-light technology an edge. But now that both technologies have evolved, the question remains: Which performs better and how should organizations choose between them?

The answer is that both technologies have key strengths and weaknesses, and along with price and flexibility considerations, the choice boils down to a handful of guidelines that can direct companies to the technology that best matches their requirements.

Consider pick-to-light systems, which are long recognized as the fastest technology because of the simple and direct way that they guide workers through pick tasks. Pick-to-light is often the preferred method of automation for high-density picking environments, which move lots of smaller products, and where the picking area or zone is very small with little movement or travel time to fulfill orders.

Pick-to-light also makes sense in warehouses or distribution centers that have lower SKU counts, primarily because a smaller environment helps keep costs in check as the price of pick-to-light is directly tied to the number of SKUs because lights have to be physically installed on every rack and pick location.

"Companies typically use pick-to-light where a lot of product is packed into a condensed area with mezzanines and flow racks," says Chris Wappler, senior business development manager for voice solutions at Bellingham, Wash.-based Peak-Ryzex, a systems integrator specializing in supply chain and mobile workforce implementations. "Lights are priced and implemented per SKU, whereas voice is priced and implemented per operator.

"For a warehouse with 100 or fewer SKUs, a company has to buy only 100 lights. But, for a warehouse with 20,000 SKUs, and 20 to 30 pickers, the pricing model for voice is much better," he adds.

MWPVL International, a Montreal-based global supply chain and logistics consulting company, takes the math further. Its guidelines for a pick-to-light solution are to budget between $50,000 and $100,000 for fixed overhead costs, including system installation, software integration, and the computers and scanners. The budget also includes $100 to $130 for each pick location, which covers the cost of an LED light display and a header display for each flow rack. With those figures in mind, costs for pick-to-light

installations can range upwards of $300,000, depending on the warehouse or DC installation, estimates MWPVL President Marc Walfraat.

Comparatively, a voice-directed picking solution for 25 users might range from $188,000 to $280,000 — a cost that covers the RF network, server, and mobile hardware and software, as well as professional services, Walfraat says.

In addition to the cost comparison, speed is also a factor in the technology decision. While pick-to-light has traditionally held a cost advantage, improvements to voice technology have leveled that playing field.

"Whether lights or voice is faster depends on the environment," says Richard Stewart, principal of Vitech Business Group, a supply chain integration firm based in Bellingham, Wash. "Advocates of light technology say light is faster because it removes the time it takes the brain to translate a spoken word or visual location and associate it with the actual spot where operators move their hands. Voice advocates claim voice is faster because operators are not slowed down by having to push a button to confirm the pick.

"The truth is, both systems are so close in speed, it really depends on how the pick is measured, the actual environment, the travel time, and the units per grab," Stewart says.

LET'S GET FLEXIBLE

Compared to pick-to-light technology, voice typically wins out in terms of flexibility. Voice solutions support multiple picking styles -- including case picking, piece picking, and cluster picking – and can also be deployed for other warehouse tasks such as receiving/putaway, replenishment, and shipping.

"Voice systems provide more flexibility than light systems," says Jennifer Lachenman, vice president of product strategy at Wexford, Pa.-based Lucas Systems, a voice-directed technology vendor. "When SKUs, or the location of SKUs change, voice allows greater flexibility, compared to a hard-wired pick-to-light system."

Voice technology's promise of hands- and eyes-free picking also affects flexibility. "Because workers are directed by voice, they can keep their eyes on their surroundings and that plays a big part in warehouse safety," Lachenman explains. "By contrast, pick-to-light instructions are displayed on an LED on a piece of equipment, so workers have to remember which display refers to which product they are working on. Voice takes the pressure off and it's a natural way to interface with a host system."

The bottom line: Sometimes there's a clear choice between the two picking technologies, but often the optimal solution is to deploy some combination of both, depending on the warehouse or distribution center environment. In either case, the project presents both cultural and operational changes, so management needs to put the proper programs in place to ensure workers are on board.

"Management needs to start educating the workforce early to help alleviate apprehension and create excitement," says Wappler. "Companies that don't spend time preparing the workforce for change will find people pushing back." ■

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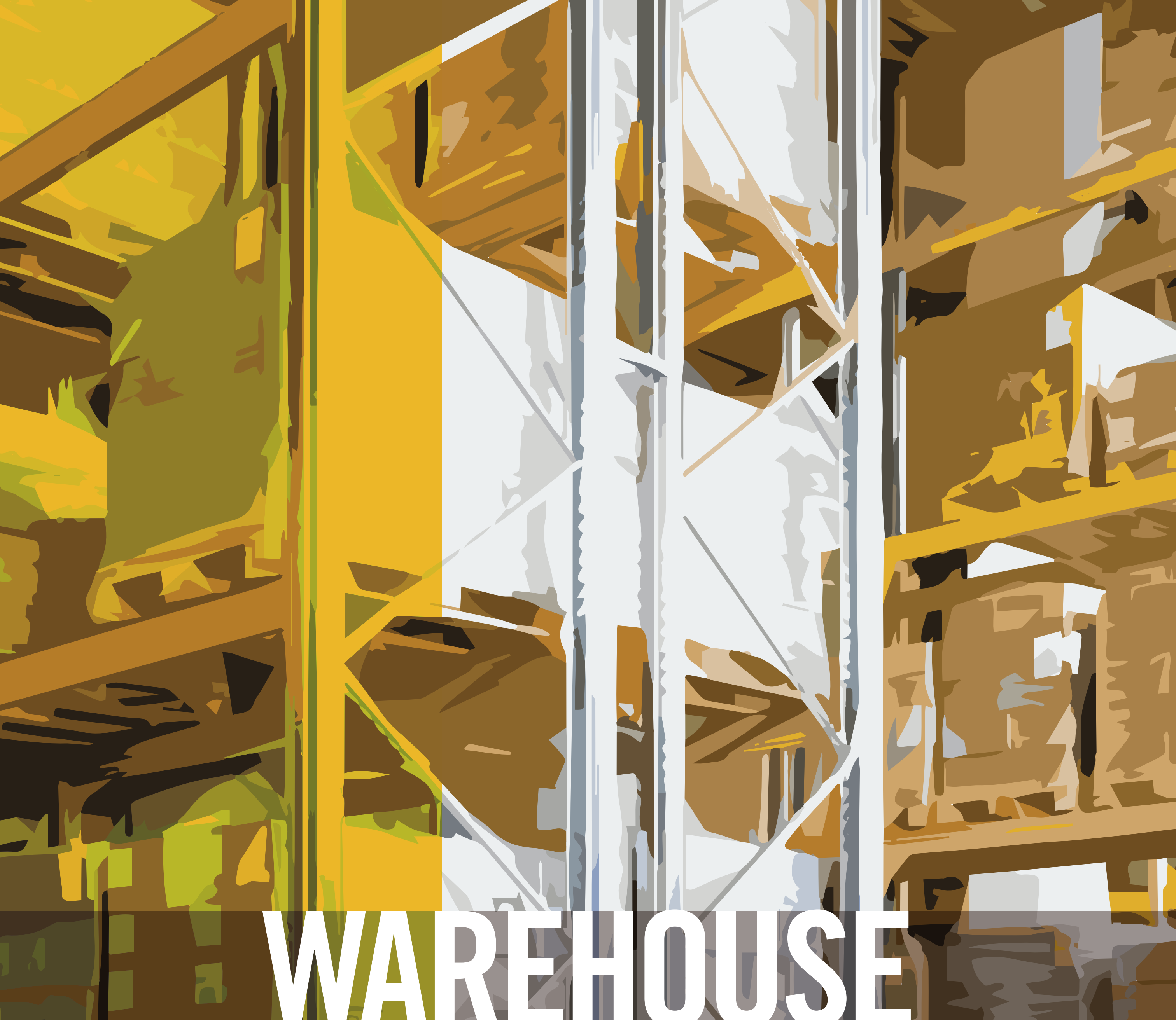

WAREHOUSE WORKHORSES

By Jason McDowell

Here's a selection of products—from simple storage bins to sophisticated conveyor systems—that just won't quit when driving warehouse efficiency.

STORAGE GEAR | LEWISBins+

Shelf Parts Bins

Designed to replace limited-use corrugated boxes, these four- and six-inch tall polypropylene shelf bins fit 12-, 18-, and 24-inch shelving units. They create an integrated storage and organization solution for retail, assembly, and inventory applications. The bins are nestable when empty to save space, and fully recyclable at the end of life. Available in four colors, they feature a raised hopper front that allows up to 35 percent more materials storage than comparable bins.

STORAGE GEAR | Akro-Mils

AkroBins Heavy-Duty Bins

These heavy-duty, industrial-grade polymer bins stack together or hang from Akro-Mils louvered racks and panels, rail racks, and louvered carts for high-density storage. Clear lids feature integrated hinge pins for easy installation without tools, and protect stored items from dust and debris while keeping contents visible and accessible. The bins are available in 14 sizes and seven colors.

PRODUCT MOVERS | Daifuku

Model 100 SmartCart Automatic Guided Cart

Because magnetic tape guides these vehicles, users can quickly install or modify guidepaths to move products on assembly lines, or transport goods through a plant or warehouse. The Model 100 cart is available in two configurations: the Tugger/Tunnel, which is low to the ground and attaches to the underside of customized carriers to tow loads up to 2,000 pounds, and the Load Handling Frame, which comes equipped with a carrier designed to move loads up to 1,700 pounds.

PRODUCT MOVERS | Raymond

End Rider Pallet Truck Model 8410

The 8410 pallet truck is made from reinforced components to reduce wear and enable use in heavy-duty applications such as order picking, loading dock operations, and extreme-temperature environments. This truck handles loads up to 8,000 pounds, travels up to 6.5 miles per hour loaded or nine miles per hour unloaded, and offers single-, double-, and triple-fork options.

PRODUCT MOVERS | Yale

MO25 Center Rider Lift Truck

Equipped with adjustable electronic power steering, automatic speed reduction in cornering, and a suspended platform with an operator-sensing floor mat, the MO25 lift truck is suitable for use in order picking and putaway applications. The control handle reduces the arm movement needed to change directions, helping to reduce worker fatigue and increase productivity.

PRODUCT MOVERS | Beumer

Sorter BS 7 Belt Tray

This high-capacity cross-belt sorter features moving conveyor belts with a contactless power supply to sort a variety of items safely and gently to the right destination – no matter the product's size, shape, or surface characteristics. Suitable for use in e-fulfillment, retail, wholesale replenishment, and parcel operations, the sorter consists of aluminium components and 50 percent fewer individual parts than comparable systems, minimizing operating and maintenance costs.

TECHNOLOGY TOOLS | DENSO ADC

BHT-1200 Series Handheld Bar-code Scanner

An ergonomic design makes this wireless bar-code terminal easy to hold for long periods of time, while its 400 scans per second and 25-foot range allow operators to scan items on all shelves without a ladder. A built-in 5.0-megapixel camera enables workers to photograph defective or mislabeled products. Durable design makes the scanner suitable for use in warehousing and manufacturing applications.

TECHNOLOGY TOOLS | Zebra Technologies

ZE500 Thermal Printer

Zebra's thermal printer's enclosed cabinet protects it in harsh environments, so it can be used in crossdocking, receiving and shipping, and order-labeling applications. Available in four- and six-inch-wide print media models, the ZE500 includes bar-code technology and provides optimal print quality across a range of media types.

PROTECTIVE BARRIERS | Rite-Hite

Fastrax Clean Room Doors

Constructed of smooth polypropylene fabric that provides high resistance to acids and bases, and a low water-absorption rate, these doors are mold-resistant and washable for use in food storage facilities. Their roll-up design allows them to operate at speeds of 100 inches per second, minimizing air intrusion and decreasing the likelihood of forklift collisions, while maximizing productivity.

PACKAGING PRODUCTS | Lantech

L Series Stretch Wrappers

The L Series stretch wrappers comprise three models. The RL Automatic is an ultra-high-speed ring straddle-style stretch wrapper capable of wrapping up to 180 loads per hour. The SL Automatic is an overhead straddle-wrapper with throughput capabilities up to 120 loads per hour, and the QL turntable-style wrapper can manage up to 70 loads per hour. All models include LeanWrap Technology to reduce film breaks, and increase wrap force without crushing products.

PROTECTIVE BARRIERS | Diversified Fall Protection

LOR-GATE Loading Dock Rolling Safety Gate

Available in six-, eight-, 10-, and 12-foot sizes to fit standard dock doors, the LOR-GATE meets all OSHA fall protection requirements. It can withstand 200 pounds of force at the 42-inch-high top rail, and 150 pounds at the 21-inch-high mid rail. The system's pivoting wheels allow dockworkers to roll the dock gate open for complete access to the overhead door and truck opening.

PROTECTIVE BARRIERS | Zoneworks

TZ Insulated Curtain Walls

The TZ configurable walls provide warehouses an adaptable barrier for containing heat or separating and partitioning temperature-controlled areas. Made from durable, fire-retardant industrial vinyl and anti-microbial polyester batting, the walls are available in three models to meet varied temperature-control needs.

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Experienced and knowledgeable service providers make short work of moving freight with extreme requirements.

by Cindy H. Dubin

EVERY DAY OFFERS PROJECT LOGISTICS EXPERTS A CHANCE TO TEST THEIR KNOWLEDGE ABOUT SHIPping modes, carrier schedules and routes, handling strategies, local restrictions, and government regulations. Transporting heavy equipment, oversized loads, live animals, and antique works of art—sometimes in extreme climates or environments lacking basic infrastructure—can test even the most experienced third-party logistics (3PL) provider.

Every project move is unique, and 3PLs routinely find themselves in a trial-and-error cycle as they plan for the unexpected, learn from experience, and continue to perfect the process. Here's a look at some project logistics moves that demonstrate the resourcefulness and flexibility required to get special loads where they need to go—no matter what.

SHELL GAME

CARGO: 46 juvenile loggerhead turtles

LOCATION: New Caledonia to Norfolk Island

PROVIDER: CMA CGM Group

Tracking tools play a vital role in many supply chain projects. But one shipment of delicate cargo involved dropping tracking devices into the ocean—attached to a group of young loggerhead turtles.

Marine turtles are threatened with extinction worldwide. To better understand the migration patterns of loggerhead turtles and protect their nesting sites, the Aquarium des Lagons in New Caledonia—a French territory in the southwest Pacific Ocean—launched a study in 2006 to gather data on the species' distribution in the western Pacific.

The latest phase of the study involved tracking the turtles' movements between their nesting site in New Caledonia and their feeding grounds on the other side of the Coral Sea, near northeast Australia. The project required transporting 46 juvenile loggerhead turtles equipped with satellite tracking devices from the aquarium where they were raised to the open ocean near the feeding grounds.

CMA CGM—a container shipping line based in Marseille, France—loaded the nine-inch-long turtles on the *CMA CGM Matisse* for deployment on the carrier's Panama Express service.

Packed in individual 20-inch by 27-inch boxes, the 18-month-old loggerheads stowed away in the ship's crew cabin during the overnight crossing.

The next morning, they were released into deep waters on the northeast side of Norfolk Island—located in the Pacific Ocean between Australia, New Zealand, and New Caledonia—before the *CMA CGM Matisse* reached Sydney.

AN OLYMPIC-SIZED FEAT

CARGO: 100 million tons of infrastructure materials needed to prepare for the 2014 Winter Olympic Games

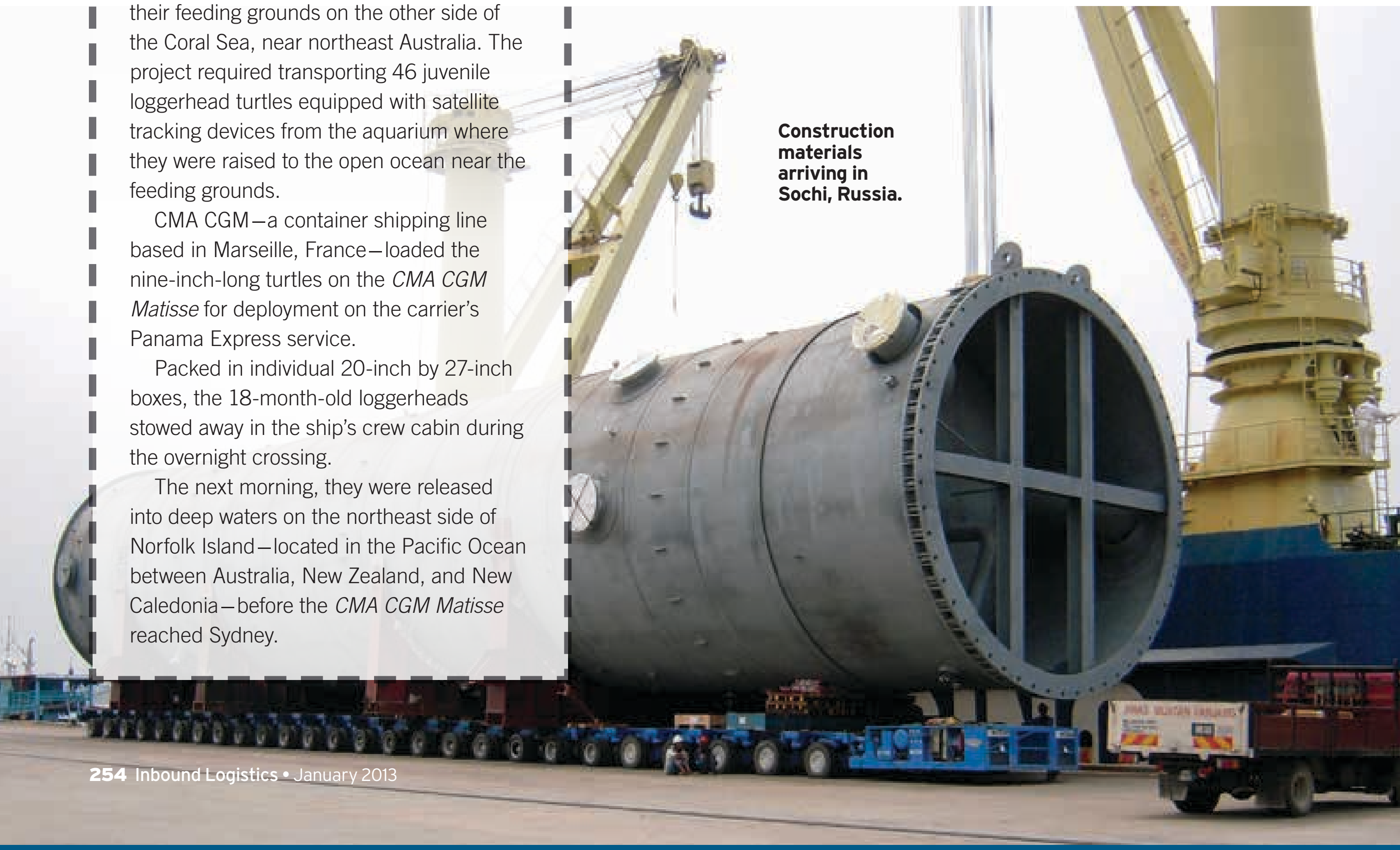
LOCATION: Numerous global locations to Sochi, Russia

PROVIDER: Kuehne + Nagel

To prepare for its role as host of the 2014 Winter Olympic Games, the city of Sochi, Russia, has started constructing venues and local sports facilities, along with modernizing and expanding area hotels, residential districts, and businesses. A total of 63 publicly funded projects were planned for completion in 2012, requiring about 100 million tons of infrastructure materials to be transported into the city.

The Games' official contractors hired Kuehne + Nagel—a global logistics provider with U.S. headquarters in Jersey City, N.J.—to manage their transportation and logistics needs, including moving construction-related specialized equipment and materials. The 3PL opened a new facility near Sochi, close to the area's international airport and a new sea-river port currently being built.

"Considerable international transportation is required for most Olympic venues," says Adrian Hawkins, vice president of projects, Kuehne + Nagel. "This is partly because of the lack of local resources—such as fabricated steel, construction cranes and equipment, and specialized products—needed to meet the huge demand over a short construction period."



Construction materials arriving in Sochi, Russia.

FUELED BY FLEXIBILITY

CARGO: Gas processing equipment

LOCATION: China to Newfoundland

PROVIDER: C.H. Robinson Project Logistics

Sometimes, dealing with Mother Nature is a project logistics provider's greatest challenge. When Tropical Storm Leslie hit the coast of Newfoundland in September 2012, the province experienced 12 hours of intense rain and wind, resulting in power outages. But a company manufacturing gas processing equipment in China needed to deliver its product for installation there.

"The shipper called on us to manage the schedule and arrange final assembly at the port in Newfoundland," says Bruce Jantzie, senior vice president at Eden

C.H. Robinson Project Logistics raises power lines to permit gas processing equipment to pass beneath.

Prairie, Minn.-based C.H. Robinson Project Logistics. "We worked with the port to get the space needed to dress the equipment with ladders and platforms."

Transporting the finished product to its final location in Newfoundland required determining the recently assembled equipment's maximum transport height. C.H. Robinson Project Logistics conducted preliminary route surveys, and determined that transporting the largest pieces through the town of Dunville would require lifting three to six electrical wires to gain enough clearance for the loads to pass.

When Tropical Storm Leslie rolled in, however, it wreaked havoc on power lines, resulting in 37 wires that needed to be lifted to allow passage of the largest load.

Organizers had to make last-minute site schedule changes as planned transport days—which involved police escorts and wire lifting—were cancelled because of the storm. By accommodating these adjustments, C.H. Robinson Project Logistics was able to transport the cargo on time and on budget.

POWERING THROUGH

CARGO: Power plant equipment

LOCATION: Global locations to Cartagena, Colombia

PROVIDERS: INTERFLEX S.A. and BDP Project Logistics

In Colombia, electrical power primarily originates at hydroelectric plants located in the center of the country. When drought, transmission issues, or high demand occur, however, these plants are not always able to generate sufficient power to meet the region's needs. In these instances, the Colombian government calls on power plants using other fuel sources to provide additional megawatts.

Termocandelaria S.C.A., a power generation company located near the city of Cartagena, along Colombia's Caribbean coast, is one such source. To generate the requested power on demand and maximize its generating revenue, the company decided to convert from natural gas fuel to dual fuel gas or diesel operation.

Termocandelaria developed an aggressive conversion timetable. Its major challenge was meeting the implementation deadline to expand its capabilities and convert to dual fuels. This required transporting plant equipment and materials from multiple locations around the world to Cartagena.

The company turned to Colombian freight forwarder INTERFLEX S.A. and its global partner, BDP Project Logistics. "We already knew INTERFLEX's capabilities, and BDP's pricing was very good," says Maria Beatriz Antequera, logistics director, Termocandelaria S.C.A. "We were also confident that BDP's global network of offices and affiliates could handle the equipment moves."

Cost control was very important for Termocandelaria, because the power plant operates in a highly competitive electricity market dominated by low-cost, hydro-based generation companies.

Materials had to be moved not only from many locations in the United States, including Baltimore, Charleston, Miami, Houston, and New York, but also from Japan, Germany, and Israel.

The shipments required both ocean and air transportation, including a chartered flight from Germany to Colombia. The transportation providers also chose air service from Japan to Colombia, which would have taken 45 days by ocean—time the shipper did not have.

Almost 90 percent of the cargo was purchased on Free Carrier (FCA) terms, which require the seller to deliver goods to a named airport, terminal, or other place where the carrier operates. This involved trucking cargo from manufacturing facilities to warehouses arranged by BDP, then packing ocean and air shipments for transport to Cartagena. Approximately 40 percent of the cargo was shipped from the Port of Houston. Most of the over-dimensional cargo was trucked at night via special trailer, which meant some roads had to be closed.

"Having BDP as a resource that could pull together all the shipments from all the origin countries was key to the project's success," Antequera says.

THE ROADLESS TRAVELS

CARGO: Wind turbines

LOCATION: China to Mongolia

PROVIDER: TransProject

Dozers accompany trucks transporting wind turbine equipment on unpaved roads.

Moving enormous wind turbine equipment is tough to begin with, but when a portion of the route lacks roads, some creative problem-solving is in order. A recent wind turbine move from factories in China to a wind farm in Mongolia included a 186-mile roadless stretch from the Inner Mongolian border town Erenhot to the jobsite.

In preparation for the move, TransProject—the heavy project logistics division of Seattle, Wash.-based 3PL TransGroup Worldwide Logistics—conducted road surveys with the shipper and road engineers. They determined it was not feasible to pave or gravel the route, because of the dirt's clay-like consistency. Once wet, it gets very thick, then dries hard, causing serious ruts. When wet again, it turns back into a thick goo.

"We spent weeks determining how we could safely transport the components," says Sue St. Germain, executive director of projects at TransProject. "It was also important to contractually allocate responsibility."

The schedule depended on delivering the components during the time of year when workers could be on-site, because it is impossible to drive the route in heavy snow or after a thaw, when the natural road turns to mud. "We needed to deliver to support the site's installation schedule," St. Germain recalls. "But the worst case scenario occurred: unseasonable rain fell for days, turning the entire natural road into a bog."

TransProject dispatched graders and dozers to escort the trucks, and pull them out of the mud when necessary. This caused the transportation process to take longer than planned, and extended the schedule. Nonetheless, TransProject successfully delivered the components to the site before the snowfall made the route impassable.

FAIRY TALE FIGURE TAKES FLIGHT

CARGO: Century-old Little Mermaid statue

LOCATION: Copenhagen, Denmark, to Shanghai, China, and back

PROVIDER: Damco

Countries must take extra precautions when sending an ambassador halfway around the around—especially when that dignitary is nearly 100 years old.

From May to November 2012, a statue of fairy tale character The Little Mermaid served as centerpiece of the Denmark Pavilion at Shanghai's World Expo, where more than 5.6 million people—equal to Denmark's current population—visited it.

The trip to China marked the first time the bronze figure has been transported since it was installed on a waterfront stone in Copenhagen in August 1913 to honor Danish author and poet Hans Christian Andersen. His fairy tales, including *The Little Mermaid*, have been translated into more than 150 languages.

Danish authorities tapped Copenhagen-based global logistics provider Damco to oversee the national treasure's journey. After securely packing the statue for the 5,130-mile trip, Damco maintained constant surveillance during its Singapore Airlines flight to and from Shanghai.

EMERGENCY RESPONSE

CARGO: Two firefighting trucks

LOCATION: Derby, England, to Kandahar, Afghanistan

PROVIDER: Volga-Dnepr Airlines

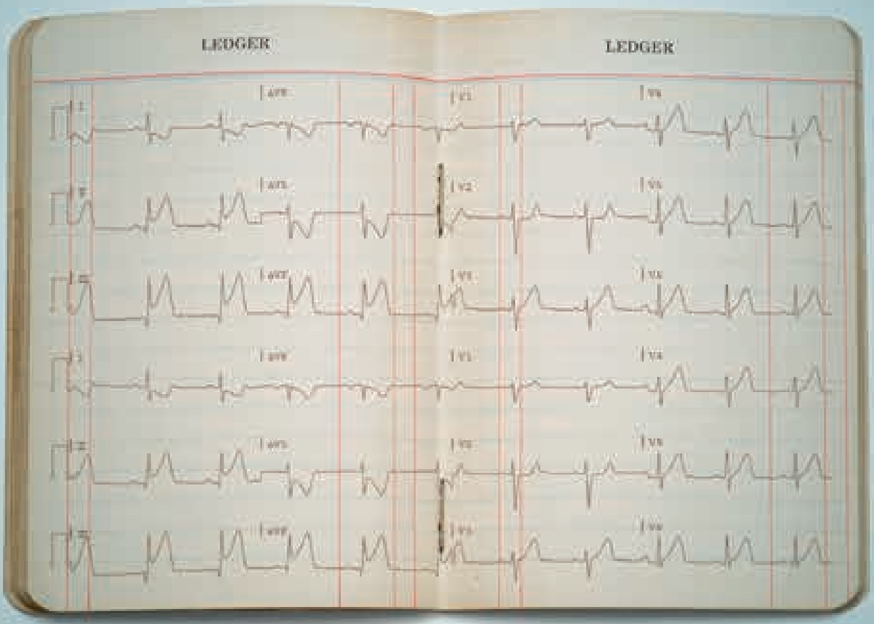
When transporting large vehicles long distances, most shippers choose an intermodal option that makes the most of ocean and rail transport. Those solutions take time, however, and require access to ports and railyards. When equipment is urgently needed in a landlocked country, the better option may be to take flight.

In September 2012, rescue vehicle manufacturer Amdac Carmichael of Worcester, England, needed to transport two mobile firefighting trucks to Afghanistan.

To handle the flight from East Midlands Airport in Derby to Kandahar, Afghanistan's second-largest city, Russian airline Volga-Dnepr operated a IL-76TD-90VD freighter, an aircraft often used for military and humanitarian aid shipments due to its ability to take off from and land on unpaved runways.

The project, completed in September 2012, required Volga-Dnepr to conduct a detailed engineering study because the fire engines' dimensions called for extremely precise loading into the cargo hold. The carrier inspected the two fire engines to confirm the 50-ton capacity cargo aircraft could carry the trucks, and to ensure optimum load plan preparation.

Working with the shipper, the airline decided to remove certain parts of the fire trucks and place them between the vehicles to allow the clearances required onboard the aircraft. The airline successfully placed the fire trucks into the cargo hold, and delivered them safely and on time in Kandahar.



Is Your 3PL Financially Healthy?

An ounce of prevention is worth a pound of cure. Conduct a financial checkup of your potential 3PL partners before you sign the contract.

by Dwight Crawley

Although we seem to be climbing out from the lowest points of the recent recession, a great deal of financial instability still plagues the logistics sector. Fiscal cliffs, tax reforms, fluctuating fuel prices, labor issues, regulatory revisions, and superstorms provide a non-stop parade of factors affecting both daily operations and long-term objectives for supply chain and logistics networks.

To succeed in business, you need to be constantly vigilant in assessing the effectiveness of your practices and partnerships. The lowest price for service might look more attractive than ever, but will it provide the value you need to retain customers and grow your business?

One of the most important supply chain relationships is between shippers and third-party logistics (3PL) providers. 3PLs do much more than just deliver product. They often handle warehousing, distribution, and customer service. And, a 3PL's use of cutting-edge technology and engineered solutions can reduce your costs and increase your competitive edge.

It is important to select a stable 3PL with a good financial track record, especially if you are signing a multi-year contract. Effective 3PLs must be financially sound and willing to invest in their own business.

Your relationship should start with a critical review of your potential 3PL partners' financial health. Not only will a thorough evaluation protect your supply chain and customer base, but it will also ensure that the 3PL you select will be a long-term partner.

WHY WORRY?

Though not as gloomy as a few years ago, the current uncertain economy continues to require rigorous review when selecting a 3PL.

On the positive side, the Korn/Ferry Institute's *2013 17th Annual Third-Party Logistics (3PL) Study* reports an optimistic outlook for the industry. Based on responses from more than 2,300 shippers and logistics service providers in North America, Europe, Asia-Pacific, Latin America, and other regions, the study indicates that despite challenging business conditions, global revenues for the 3PL sector continue to rise as service providers work to improve their business presence and create value for customers.

In addition, 65 percent of shipper respondents report an uptick in their use of 3PL services, and say they are increasingly satisfied with their 3PL relationships.

"Both shippers (86 percent) and 3PL providers (94 percent) view their relationships as successful, with shippers posting some impressive results from outsourcing; slightly more than half say their use of 3PLs has led to year-over-year incremental benefits," according to the study.

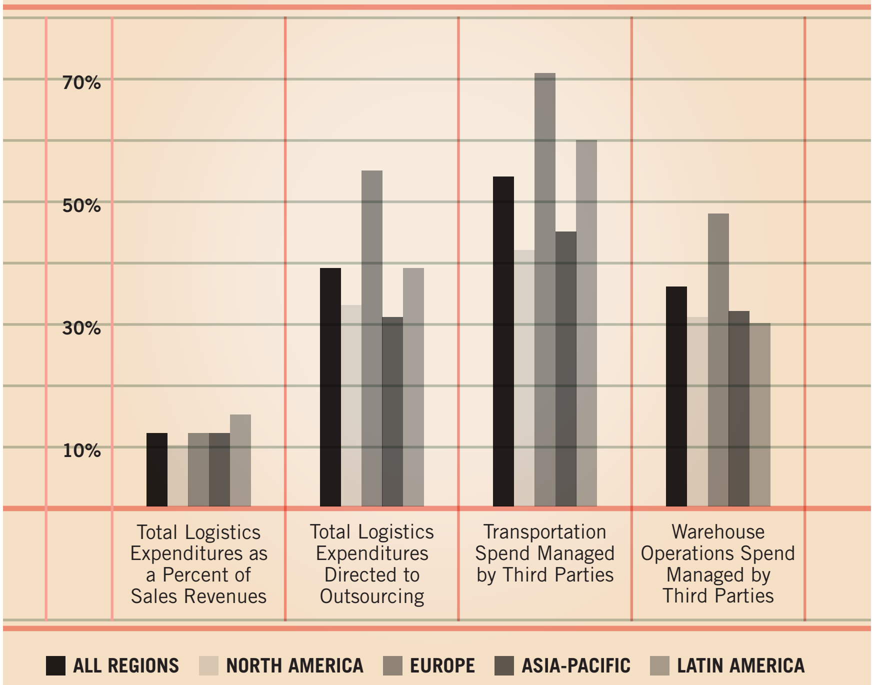
Shippers also report significant savings from logistics cost reductions (15 percent), inventory cost reductions (eight percent), and logistics fixed-asset reductions (26 percent). "And, shippers are more satisfied than 3PLs (71 percent to 63 percent) with the openness, transparency, and good communication in their relationships, while 67 percent of shipper respondents judge their 3PLs as sufficiently agile and flexible," the study notes.

Despite those findings, many risk factors still cause concern, cautions the Center for Supply Chain Research at Pennsylvania State University's Smeal College of Business.

"Today's complex supply chains are more vulnerable than ever before to negative impact from disruptive events, and shippers are becoming increasingly demanding of their 3PLs' risk mitigation capabilities," according to the Center. "A number of factors—including extended supply chains, reduced inventories, and shortened product lifecycles—are making

Outsourcing Spending Patterns Persist

There are dramatic differences across geographies in the percentages of transportation and warehousing spend managed by third parties. On average, outsourcing accounts for 54 percent of transport spend, but this figure ranges from a low of 42 percent in North America to 71 percent in Europe.



Source: Korn/Ferry Institute, 2013 Third-Party Logistics Study

> Ask yourself: Do my 3PL partners have the financial stability to weather significant disruptions, especially when access to capital is more restricted? And, are they in a good position to take advantage of innovations that will both protect and advance my business?

supply chain disruption both more likely and more costly.

"Economic losses from supply chain disruptions increased 465 percent from 2009 to 2011, while at the same time, the number of companies experiencing supply chain disruption grew by 15 percent," the Center notes. "The Korn/Ferry report highlights adverse weather, and the threat of a pandemic, as the biggest sources of supply chain disruption, cited by 69 percent of shipper respondents. Commodity, labor, or energy cost volatility is the second, cited by 59 percent of shipper respondents."

The higher risks 3PLs face are accompanied by extreme pressure from banks that are significantly restricting lending practices. 3PLs are also pinched between customers who make extended payments and workers who must be paid weekly. Historically, 3PLs have funded operating costs, lease commitments, and capital investments. With less bank funding, many 3PLs now face cash flow shortages, increased interest costs, and over-extended credit.

KEEPING UP

While technology plays an increasingly important role in supply chain operational efficiency and risk mitigation, many 3PLs don't have the resources to keep up. Despite the increased risk of supply chain disruption, many companies are currently underfunding disruption-mitigation planning. Without more advanced strategies in place, 3PLs will not be as effective at minimizing the risk of disruptions, The Center for Supply Chain Research study reports.

Ask yourself: Do my 3PL partners have the financial stability to weather significant disruptions, especially when access to capital is more restricted? And, are they in a good position to take advantage of innovations that will both protect and advance my business?

When evaluating a 3PL as a potential partner, perform a rigorous due diligence review. To conduct this financial review, rely on independent sources, as well as information the 3PL provides. If it wants your business, the 3PL should be more than willing to help you qualify its financial standing.

Look for data—balance sheets, income statements, cash flow records, and financial statement footnotes—for at least the past two years. Check bank references, and make sure the 3PL's certificates of insurance provide enough coverage to meet your minimum levels.

If the 3PL is a public company, its 10K annual report and most recent 10Q quarterly report should provide much of what you need. If the 3PL is privately

Financial Checklist for 3PL Relationships

Before you sign on the dotted line with a new partner, it is important to do a thorough review of the 3PL's financial history and outlook. Here are key factors to evaluate:

CHECK	TRACK	REVIEW
Credit report and bank references.	Financial data for the past several years.	Customer base for diversity and stability.
Certificates of insurance.	Potential risk of financial failure using a tool such as the "Z score" for predicting bankruptcy.	Private funding for impact on available cash.
Financial rating with an independent firm such as Moody's Investors Service.		Outstanding liens or claims.
Vendor ratings for payment history.		Acquisition costs, or any factors that could overextend financial resources.

owned, ask for copies of the most recent financial reports, and talk with its finance personnel if you have questions.

When you review a 3PL's financial reports, focus on profitability and the degree of leverage. A company that isn't profitable may not be a long-term player, and too much debt in relation to stockholder equity can be a red flag. Also, read the notes to financial statements. They can provide an inside look at factors such as litigation, merger activity, unfunded benefit obligations, or other financial transactions that could be disruptive to the business.

Also ask for a list of major customers, and inquire about the dollar volume of sales for the largest customers. Determine if sales are concentrated among only a few customers, and whether or not the loss of any one customer could have an impact on the company's ability to continue servicing all customers.

3PLs Deliver Measurable Results

Shippers worldwide report impressive results through use of 3PL services.

Results		All regions
Logistics Cost Reduction		15%
Inventory Cost Reduction		8%
Logistics Fixed Asset Reduction		26%
Order Fill Rate	Changed from	58%
	Changed to	65%
Order Accuracy	Changed from	67%
	Changed to	72%

Source: Korn/Ferry Institute, 2013 Third-Party Logistics Study

CREDIT CHECK

When you look at a 3PL's credit risks, check with independent sources including credit reporting agencies such as Dun & Bradstreet, and rating agencies such as Moody's and Standard & Poor's. The credit agencies should also have information on outstanding liens and claims. Evaluate whether liens and claims are factors of normally secured credit, or a result of unpaid vendors.

Vendor ratings for payment history are also often reported to these agencies. Be careful not to rely too much on payment history alone, because it may be outdated and often contains errors or omissions. You can also do a public records search for outstanding items such as liens or bankruptcies.

Strong cash flow is the most important indicator of financial health. The Statement of Cash Flows is a key financial document that reveals the level of cash the company generates. Review that statement to determine whether the 3PL has sufficient cash flow to invest in customer needs or support services, such as information technology and engineering.

The Statement of Cash Flows will also show the level of capital spending, financing activity, and large transactions that occurred during the period. Look for items that may raise questions about the 3PL's stability.

Some service providers have a pattern of acquisitions that creates a negative impact on financial resources. Acquisitions are often reported in news releases, on a company's Web site, or can be located through an Internet search. Examine the size, funding source, and business rationale for acquisitions. A large acquisition that requires significant outside debt funding can be a distraction and a source of financial instability.

If you are doing an analysis of a privately owned company, seek out information from the 3PL, its Web site and news releases, and basic Internet searches. You can also ask a privately owned 3PL company to respond to specific questions regarding its financial health.

Complete your review of the service provider's financial health before you sign or renew contracts. Afterward, review financial conditions annually. If situations such as a change in control of the service provider arise, consider doing a more frequent review.

ASSESSING YOUR PARTNER'S PREPAREDNESS

Supply chain disruptions significantly affect your bottom line, so you should know how your 3PL partner is positioned to deal with them on the logistics side.

Prepare some probing questions before finalizing the agreement. Ask about internal planning for disaster preparedness, labor shortages/stoppages, technology outages, weather-related transportation disruptions, and other risks particular to your product line.

Also ask what kind of investments the 3PL has been making—and plans to make—in technology and equipment innovation, as well as employee training. Is it able to keep up with competitors? How disruptive will any changes be to daily operations? And, how will the 3PL pay for innovation and measure its effectiveness?

While many factors come into play when choosing a 3PL, don't overlook the importance of choosing a financially stable partner. Unhealthy logistics partners could damage your business and negatively impact your customers.

A 3PL that is not financially stable may be focused on its own economic situation rather than helping you improve your business. Financially healthy partners should have the resources to invest in you as a customer, and in their own operational capabilities, to provide the customer service you require. ■

Dwight Crawley is the chief financial officer of Kenco, a Tennessee-based third-party logistics company.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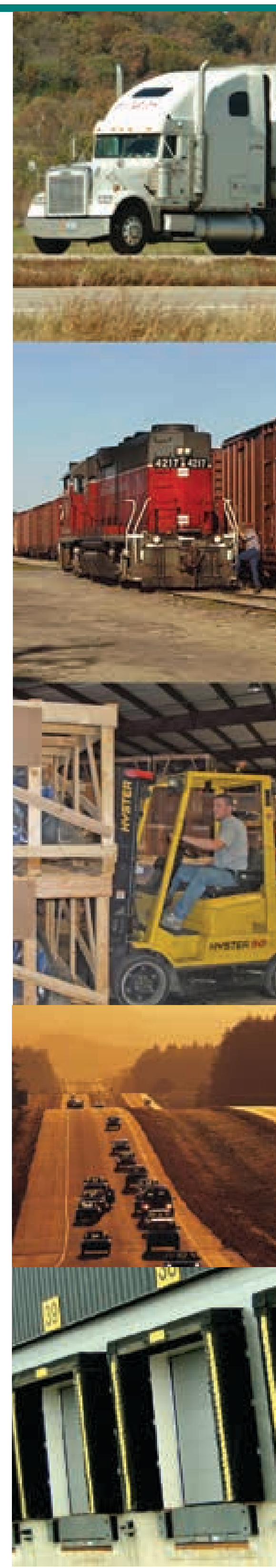

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INBOUND LOGISTICS'

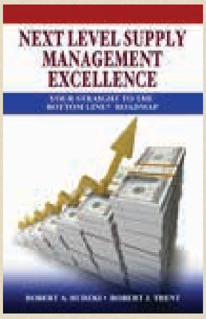
WINTER READING GUIDE 2013

Whether you want to casually brush up on your supply chain management techniques or drastically reorganize your purchasing processes, you'll find the knowledge you need in the pages of these supply chain resources.

by Jason McDowell

Next Level Supply Management Excellence: Your Straight to the Bottom Line® Road Map

By Robert A. Rudzki and Robert J. Trent

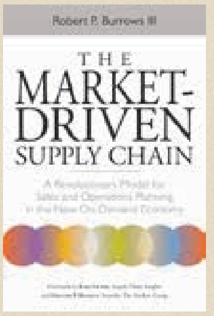


Is there another level of supply management and procurement that's more profitable, efficient, and functional than the status quo? Authors Rudzki and Trent believe so, and they describe how to step up your supply game using a transformation method that has been proven across numerous industries. They lay out the steps you can take to transition from a tactical perspective to a strategic one, and illustrate the key components and factors necessary to achieve a successful supply management transformation.

KEY TAKEAWAYS: Business managers usually underestimate the importance of the relationship between supply management and finance. To reach a new level of supply management excellence, and increase profits, don't just improve the top line; focus on the bottom line as well.

The Market-Driven Supply Chain: A Revolutionary Model for Sales and Operations Planning in the New On-Demand Economy

By Robert P. Burrows III

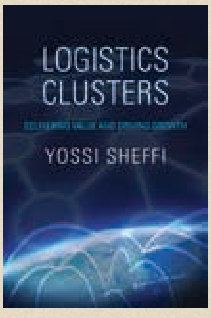


The Market-Driven Supply Chain delivers in-depth methodology, combined with detailed, firsthand case studies, to help transform traditional supply chains into advanced sales and operations planning machines. Burrows demonstrates how to analyze your supply chain from the customer end rather than the manufacturing end in order to gain a firmer grasp on consumer demand.

KEY TAKEAWAYS: You can improve your organization's performance by using customer connectivity strategies, and replacing traditional practices based on past behavior with facts and market analyses that look into the future. Burrows recommends implementing monthly planning processes to effectively manage demand, and establishing a weekly rate-based planning process at the operational level.

Logistics Clusters: Delivering Value and Driving Growth

By Yossi Sheffi

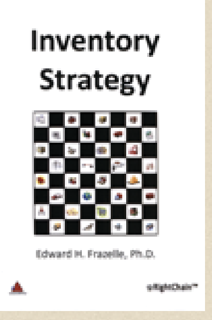


Can logistics clusters—geographically concentrated sets of logistics-related business activities—be part of the solution to today's economic problems? Yossi Sheffi, director of the MIT Center for Transportation and Logistics, thinks they can. The author argues that developing and investing in logistics clusters can help ease an economic recession.

KEY TAKEAWAYS: Sheffi's examination of logistics hubs provides insight into new business opportunities. Companies that locate within a logistics hub can easily access any type of logistics service they need, allowing for new contacts, new business, and financial savings. Additionally, investing in logistics hubs creates jobs that can help the struggling U.S. economy.

Inventory Strategy: Maximizing Financial, Service, and Operations Performance with Inventory Strategy

By Edward H. Frazelle, Ph.D.



Frazelle explores advanced inventory strategies and the increasing maturity of inventory management. Using a mix of case studies, analytics, and illustrations, Frazelle confronts prevailing inventory ideals, and reestablishes the fundamentals of inventory. Readers will gain insight into optimizing inventory levels across financial, service, and operational perspectives.

KEY TAKEAWAYS: The key to overcoming inventory performance obstacles is using fundamentals—the breakthroughs are in the basics. Inventory is not the end, but a means to an end. Once you master these inventory techniques, you can make your inventory work in harmony with all aspects of the supply chain.

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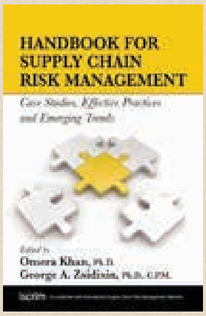
Handbook for Supply Chain Risk Management: Case Studies, Effective Practices and Emerging Trends

Edited by Omera Khan, Ph.D. and George A. Zsidisin, Ph.D., C.P.M.

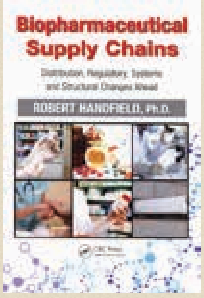


This book contains a comprehensive collection of diverse practices that executives and practitioners in almost any industry can adopt to manage supply chain risks and improve overall business performance. Thirty international contributing authors share their insights about risk management and cover topics including globalization, outsourcing, Lean initiatives, information security, natural disasters, political upheaval, and economic recession.

KEY TAKEAWAYS: No one-size-fits-all solution exists for developing a risk management plan. There are, in fact, many potential risk-handling methods. To know which method to use, you must know the sources of supply chain risk, so you can create a more resilient firm when faced with disruptions.

Biopharmaceutical Supply Chains: Distribution, Regulatory, Systems and Structural Changes Ahead

By Robert Handfield, Ph.D.

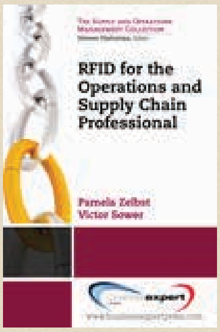


The biopharmaceutical supply chain has undergone many changes during the past decade, and Handfield explores them all in this book, which documents the impact of these developments on key supply chain players. He also predicts future trends, and outlines the existing biopharmaceutical supply chain in a way that can drive business strategy for life sciences manufacturers and distributors.

KEY TAKEAWAYS: Readers in the biopharmaceutical field will appreciate this overview of the industry's challenges and how leading companies are addressing them. By exposing the underlying structures that support the biopharmaceutical supply chain, and the complicated set of channels that exist between various points, this book helps readers make more informed procurement decisions.

RFID for the Supply Chain and Operations Professional

By Pamela J. Zelbst and Victor E. Sower

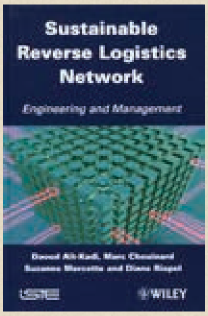


If you're looking for an overview of radio-frequency identification (RFID) technology, examples of how RFID is being used effectively everywhere from hospitals to warehouses, and guidelines for implementing an RFID system, this is the book for you. The authors discuss the benefits of RFID compared to similar technologies, and new applications for its use in the future.

KEY TAKEAWAYS: RFID technology can help improve efficiency, effectiveness, and responsiveness throughout delivery and service processes. RFID is not, however, a magic bullet that will fix every company's problems. Businesses must be prepared to adapt their processes to RFID technology before expecting any operational improvement.

Sustainable Reverse Logistics Network: Engineering and Management

By Daoud Aït-Kadi, Marc Chouinard, Suzanne Marcotte, and Diane Riopel



Reverse logistics targets returns, rejects, and by-products, and focuses on turning losses into profits on items that have previously been eliminated or ignored. This book provides an educational tool for engineering schools — as well as a management tool for businesses — for implementing a reverse logistics process. The authors propose generic concepts and strategies that can be adopted by any company that produces goods and services.

KEY TAKEAWAYS: Readers will learn how to implement a reverse logistics model in their company, and see how it can be profitable. On a broader scale, the book illustrates how a sustainable logistics network can benefit any company.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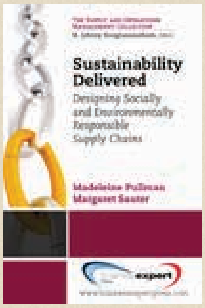
Sustainability Delivered: Designing Socially and Environmentally Responsible Supply Chains

By Madeleine Pullman and Margaret Sauter

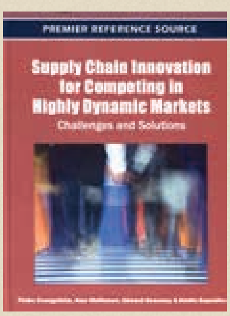


Social and environmental responsibility can be integrated into supply chain management, according to authors Pullman and Sauter. From sustainable product and process design, to programs and techniques that support product end-of-life management, this book teaches procurement officers and executives how to go green. Through case examples, workshops, and step-by-step instructions on how to create a sustainable supply chain, business leaders will learn to pursue and deliver on sustainability ideals.

KEY TAKEAWAYS: Readers will develop skills to support sustainable supply chain management, while gaining a deeper understanding of the concept of sustainability and its applications in the business world.

Supply Chain Innovation for Competing in Highly Dynamic Markets: Challenges and Solutions

By Pietro Evangelista, Alan McKinnon, Edward Sweeney, and Emilio Esposito

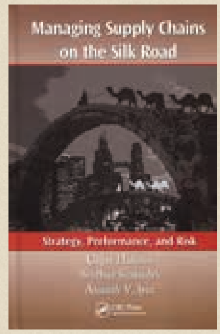


Rapid changes in technological development are forcing businesses to continuously innovate to improve competitiveness, and these innovations are particularly evident in logistics and supply chain management. This book focuses on supply chain integration from both strategic and operational perspectives, and the impact of information technology-related innovation in the supply chain and logistics service sectors.

KEY TAKEAWAYS: Understanding the ever-changing customer-supplier relationship is key to success. The authors also demonstrate how risk management can be used as an innovative tool in managing supply chain relationships due to its positive impact on various determinants of outsourcing success.

Managing Supply Chains on the Silk Road: Strategy, Performance, and Risk

By Çagri Haksöz, Sridhar Seshadri, and Ananth V. Iyer



The supply chain concept and its related practices are not new to the modern age, but have been practiced for centuries along the Silk Road—the trading route of ancient Chinese civilization. They are also the foundation for today's global supply chains, according to Haksöz, Seshadri, and Iyer. Against this backdrop, the authors explore the differences and similarities in the supply chain management process along the Silk Road, and what you can learn from them. The book also provides new examples from different countries the Silk Road passed through, from China to Europe.

KEY TAKEAWAYS: Readers will learn a comparative approach to supply chain management, covering structural, strategic, and operational topics while exploring a detailed history of the Silk Road and how it evolved into today's supply chains.

Global Supply Chain Security

By James R. Giermanski

Giermanski describes the advent and subsequent development of security operations in the global supply chain, and outlines the contributions of governmental and non-governmental stakeholders to this worldwide concern. *Global Supply Chain Security* explores the potential impact of port-related catastrophic events in the United States and their effects worldwide, and details the country's contribution to global container security.

KEY TAKEAWAYS: Giermanski's insights into U.S. policy deficiencies regarding supply chain security are eye-opening. He also delves into the roles the Department of Homeland Security and the private sector play in regards to the global supply chain security threat, laying bare the surprising vulnerabilities of both, as well as suggested methods for plugging the holes.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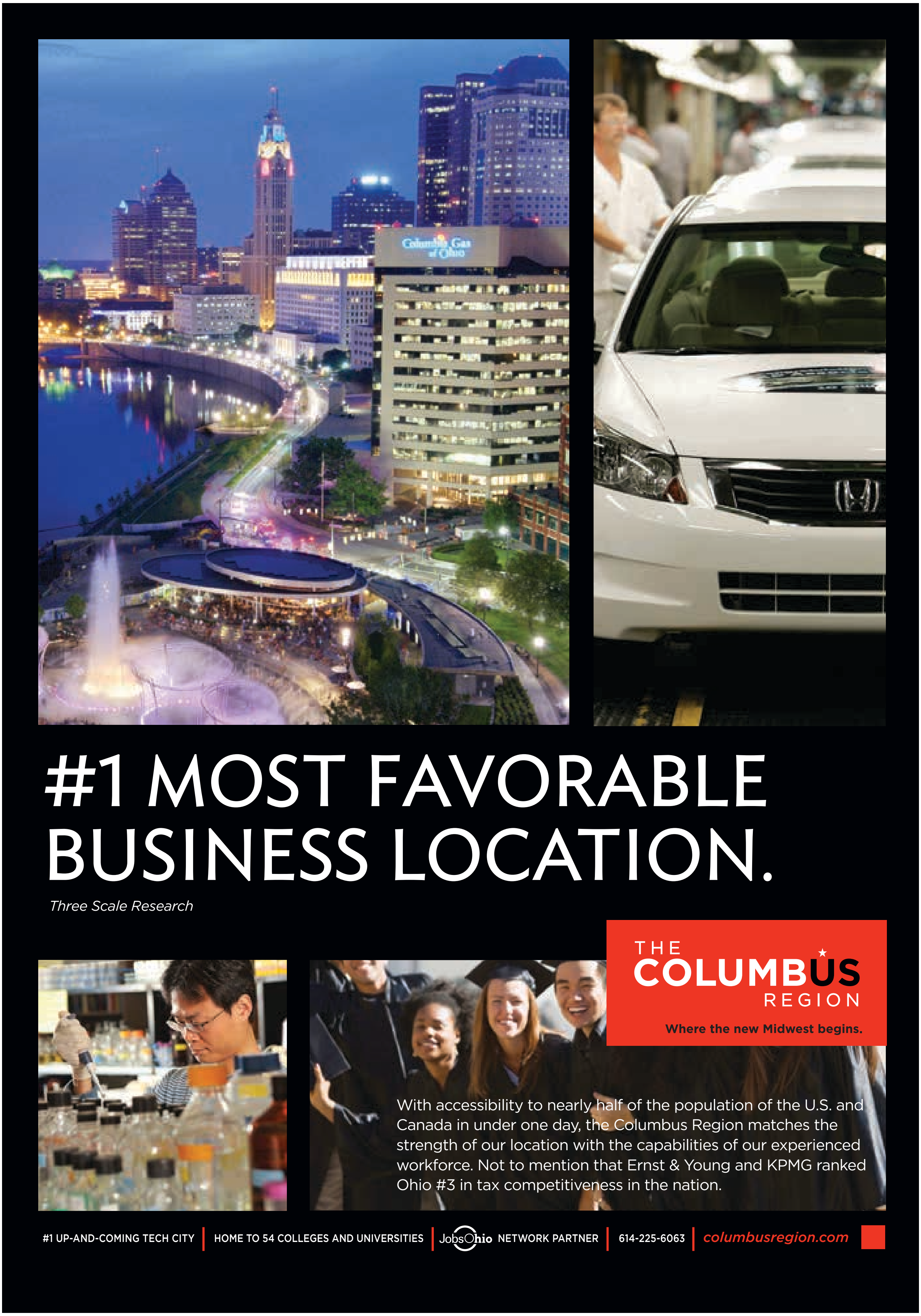
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Cloud-Based WMS Fires Up Supermercados Supply Chain

Peruvian supermarket chain Supermercados feeds its need for DC network realignment with a SaaS WMS solution.

Warehouse management systems (WMS) possess a unique capacity to transform the way distribution facilities operate, mobilizing inventory and expediting flows efficiently and economically. WMS also enable users to more easily measure improvements in order visibility, picking productivity, shipment accuracy, labor and asset utilization, and inventory turnover.

But sometimes soft ROI reinforces the value proposition. Under the right circumstances, a WMS can drive extraordinary change beyond the four walls. Peruvian supermarket chain Supermercados Peruanos S.A. found just such an opportunity in 2010 when it embarked on a two-year project to revamp its distribution network.

Owned by Interbank, a Lima-based financial services company, the grocery chain is the largest business within the group, which also includes pharmacy, home improvement, and department stores. Supermercados operates 80 locations in three distinct formats—hypermarkets (combination grocery and department stores), supermarkets, and discount stores.

The South American market is primed for growth. With a Pacific Coast presence, strong commodity markets, and a growing consumer class, countries such as Chile, Colombia, and Peru are capitalizing on import and export trade with the United States and Asia, and increasing investment in transportation and logistics.

"Credit is easier to come by, which generates greater buying power," says Diego Pantoja-Navajas, CEO and founder of Atlanta-based WMS provider LogFire, which maintains a strong South American presence. "Retail chains and supermarkets are growing fast, which is fueling the supply chain industry."

Supermercados' growth trajectory is a perfect example of this changing landscape. The grocery store chain is re-tooling and reconfiguring its existing distribution footprint, which includes four warehouses. The distribution centers (DCs), which account for approximately 550,000 square feet of space within a 35-mile radius of Lima, are segmented by product categories: non-food; dry goods; fruits and vegetables; and cold storage perishables.

The project features a major investment in new facilities, warehouse technology, and materials handling equipment with a focus on automation.

In fall 2011, Supermercados went live with LogFire's cloud-based Software-as-a-Service (SaaS) WMS at a new distribution center in southern Lima. The facility—one of two new consolidated DCs that feature in the company's plans moving forward—is the centerpiece of a hub-and-spoke distribution footprint powered by LogFire's WMS solution suite.

Visibility Through the Cloud

As it began its project, Supermercados faced a planning challenge: determining how to phase in the new WMS solution within the framework of its changing DC network. The company decided to upgrade the four existing facilities with LogFire's WMS first, rather than wait for the new DCs to come online.

"We wanted to ease the transition by having all our staff familiar with the system," says Gabriel Ortiz, vice president of supply chain for Supermercados. "And the WMS system we were using did not have the functionality we needed."

The initial implementation phase of LogFire's WMS at the Lima DC took four months—a considerable feat given the circumstances. LogFire was tasked with redesigning certain logistics processes and integrating the solution with Supermercados' existing SAP enterprise resource planning system. It also had to train and certify warehouse employees.

While the grocery store chain knew what WMS capabilities it wanted, LogFire helped push the SaaS deployment. What caught the CIO's attention, says Pantoja-Navajas, was the fact that the technology vendor would be 100-percent responsible for upgrades, maintenance, and 24-hour support—an approach that dovetails with Supermercados' strategy for partnering with third-party providers.

An improved distribution network helps grocery chain Supermercados deliver fresh products to its 80 locations.

"We aim to outsource functions that are not core to our business," says Ortiz. "When we find service providers that can support that goal, we partner with them."

LogFire provides the necessary infrastructure to support a SaaS model—which is critical when installing a cloud-based solution versus an on-premise system. To build the necessary redundancy and security into the system, the solutions provider created a multi-protocol label switching line – technology that regulates data traffic in a complex network—direct to the warehouse. It also established a back-up microwave connection as a contingency for possible communication disruptions.

The cloud-hosting option enables Supermercados DC workers to access the WMS from any computer or Internet-connected mobile device, providing all the benefits of a full-scale solution with less hardware and lower costs. Supermercados pays for the WMS based on usage.

"This approach frees us from investing hundreds of thousands of dollars in hardware, maintenance, and upgrades," says Ortiz. "And we can adjust our usage expenses for peak periods."

Maximizing Flexibility

The SaaS WMS also provides greater utility in how Supermercados operates its warehouse. In addition to its WMS solution, LogFire features a productivity tracking system (PTS) and supply chain analytics dashboard (SCAD)—plug-and-play modules that users can turn on or off. Supermercados has implemented the WMS and dashboard, and will eventually phase in the PTS part of the solution suite.

LogFire's technology empowers tablet and smartphone devices to interface directly with the WMS. This mobility increases communication and real-time decision-making inside the DC, while improving efficiency and productivity. Supervisors can manage warehouse operations on the floor rather than from the back office.

"They can run reports and perform dock-to-stock analysis to see how fast items are moving," explains Pantoja-Navajas.

Supermercados uses the tablet to facilitate its receiving process. If a vendor submits a purchase order without an advance shipping notice (ASN), workers can create one on the fly to receive the product without leaving the warehouse floor.

WMS as Supply Chain Change Agent

Mobility has enabled Supermercados to perform more tasks in real time. Interfacing with tablets and smartphones allows users to access data more easily, and facilitates training. The visibility and reporting capabilities LogFire's WMS solution provides have also changed the way Supermercados engages vendors and retail stores.

The company maintains a broad

network of more than 1,500 suppliers, ranging from large multinationals such as Procter & Gamble, Kimberly-Clark, and Unilever to small mom-and-pop shops located in remote areas of Peru. Large vendors have their own production systems that easily integrate with Supermercados' WMS and business-to-business systems. But many of its smaller partners don't have this bandwidth.

"One reason we chose this accessible, easy to use technology is that eventually we plan to integrate smaller vendors that don't have the ability or budget to invest in this type of solution," says Ortiz. "The integration will enable vendors to use the tool to prepare purchase orders, print carton labels, and create ASNs."

CLIMATE CONTROL

One obstacle Supermercados faces when delivering product to market in Peru is the country's geography. Despite a relatively small surface area compared to the United States—it is roughly the size of Alaska—Peru features three distinct types of terrain from west to east: a Pacific coastline, the Andes Mountains, and Amazonian jungle. A lack of well-developed transportation and logistics infrastructure connecting larger cities challenges the rapidly growing country, making distribution efficiency a top priority.

By consolidating its existing distribution footprint in Lima from four facilities to two, and adding two regional DCs in the north and three in the south, Supermercados expects to streamline its distribution operations and increase demand responsiveness by shortening transportation distances between suppliers, warehouses, and stores.

"Our strategy is to have centralized DCs that will support regional facilities in four different geographical parts of the country," says Gabriel Ortiz, vice president of supply chain, Supermercados.

An Invitation to the Cloud

Pantoja-Navajas is particularly excited about how Supermercados plans to dispatch the WMS throughout the network and create opportunities for more collaboration. LogFire is working with the grocery chain to provide a vendor management program where they can invite small suppliers to move into the cloud.

"It doesn't matter how good your WMS is within the four walls if your vendors aren't providing you with good data," says Pantoja-Navajas. "It creates bottlenecks on the receiving end."

For a nominal fee, vendors will be able to use the system and become certified suppliers to Supermercados. The supermarket, in turn, can use the WMS to drive vendor compliance and qualify suppliers based on who is using the system.

"This technology is significantly impacting the market," says Pantoja-Navajas. "Many of Supermercados' vendors are small agricultural growers. They don't know what a WMS is. But if you give them access to the tool, it will change the way the supply chain operates."

Extending LogFire's WMS capabilities to smaller vendors is just the beginning. Supermercados also plans to deploy the solution at its retail store locations.

"After demonstrating success in the warehouse, Supermercados asked whether they can receive product with LogFire at the store level," says Pantoja-Navajas. "So that is now part of the implementation's second phase."

One of the biggest issues supermarket stores and other retailers face is receiving product at stores with systems that cannot completely close the order cycle.

"If a company distributes product with the LogFire WMS, and receives it with the system at the store level, there's no question that what was shipped was received," says Pantoja-Navajas. "Workers scan and receive the product, and update the system. If customers want to make an inventory adjustment because an item was damaged in transit, they can do that."

With further development in its point-of-sale system and other technologies that interact with the WMS, Supermercados expects to extend certain functionalities to the back room of its stores. The company has already started to divine some of the efficiencies that can be gained by aligning DCs and stores through the WMS.

"Now when we produce a carton out of our warehouse, we use GS1-128 shipping labels, which feature pre-defined zone coding to enable carton visibility throughout the supply chain," says Ortiz. "The stores receive at that level, so we are able to track productivity, transit times, and when stores receive cartons from the warehouse, then automatically update the system as to the status of the box. We have visibility across the entire process."

A Model for Innovation

Supermercados saw immediate results after LogFire completed the initial installation of its cloud-based WMS at the Lima distribution facility.

"Shipping order volume doubled within one week of going live," says Pantoja-Navajas. "Supermercados was able to perform more efficient crossdocking and put-to-store processes. The WMS changed the way it managed inventory—and the supply chain."

Supermercados' decision to implement LogFire's WMS was predicated on a well-developed distribution strategy and long-term growth plan. That it is fundamentally changing the way the company engages suppliers and retail stores beyond the warehouse is remarkable. Other companies within the Interbank group are now following suit.

The WMS has had a substantial impact throughout the entire Supermercados organization, and Ortiz is bullish about future prospects. "We haven't even fully rolled it out to our new state-of-the-art distribution facilities yet," he says. ■


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Improved Warehouse Operations: Cause to Celebrate

Party goods supplier Oriental Trading Company revamps its warehouse technology to keep pace with online sales.

Over the past 80 years, Omaha, Neb.-based Oriental Trading Company (OTC) has shaped its business to respond to changing market conditions, consumer demand, and technological developments. The party supply and novelty goods company's current "explode-and-assemble" warehouse system reflects how the business has successfully adapted its operations to maximize efficiency.

Founded in 1932 by Japanese immigrant Harry Watanabe, OTC established a lucrative market niche by selling Kewpie dolls and other novelty items through local stores and carnivals. The company expanded its distribution across the Midwest, retrenched to its Omaha base when World War II erupted, then resumed importing from Japan in the 1950s.

In 1956, OTC launched its first catalog, rapidly establishing itself as a major carnival supplier. The business grew powerfully when it shifted to offering party goods for churches, schools, and retailers. OTC's direct-to-consumer approach cemented the business as an American marketing success.

Going Online

The company's growth—and how it managed orders through its warehouse—again evolved with the advent of the Internet and digital marketing. Oriental Trading used to drive the market by seasons, distributing a monthly catalog that focused on calendar events, such as Christmas, Valentine's Day, and St. Patrick's Day. The company knew its hot products at any given time—an invaluable asset for managing orders through the warehouse.

This strategy changed radically, however, as digital communications and consumer use of the Internet increased. OTC launched a Web-based catalog that contained its entire line of goods. The direct-to-consumer market took off with this new technology, but rather than OTC driving the market through a seasonal focus, consumers began creating the market through their own choices.

Sales grew rapidly, and order diversity increased as more customers shopped online. Consequently, people might buy Christmas decorations in August, or shamrocks in December.

As OTC prepared a new, larger warehouse to manage the growth, it needed a new materials handling system to accommodate the latest market dynamics and resulting order profiles.

"We were seeking an integrator to help us pull together the various technologies we anticipated using in our new facility," says Deon Wagner, vice president, fulfillment center operations at OTC. "We had a homegrown warehouse management system (WMS), but to meet the new systems' targeted implementation date, we couldn't simply modify our WMS. We decided to use a warehouse control system (WCS) to integrate the equipment with other technologies we needed to automate the facility."

Managing Major Growth

The major transition at OTC was from a paper-based, pick-to-stock system to what Wagner calls an explode-and-assemble one—a change necessitated by the rapid proliferation of stockkeeping units (SKUs).

"OTC maintains about 75,000 SKUs to be picked to fill customer orders," says Chris Castaldi, manager, new business development at Carlstadt, N.J.-based W&H Systems Inc., the materials handling systems integrator OTC selected for the project. "On peak days, OTC may handle more than 400,000 items to fill its orders."

A highly automated facility was essential to handle this volume. "We're using W&H's system to tie all the technology pieces together, act as a liaison between them, and send the information to our higher-level systems," says Wagner.

Key automation tools include a pick-to-voice system incorporating voice recognition technology; a high-speed sortation system; additional conveyance and sortation equipment; and scanning technology for final packing and shipping.

Oriental Trading Company's warehouse workers follow instructions from a voice-directed picking system.

The WCS is a large plug-and-play software solution that understands and communicates with the other automated technologies in the facility. "It's a brain for materials handling," says Castaldi.

OTC selected the WCS for its functionality, but also for the visibility it provided to the entire fulfillment center. "The WCS breaks the large product wave—up to 10,000 orders—we allocate in our WMS into four subwaves, from which we direct orders to specific chutes," says Wagner. "It 'explodes' the main wave into an efficient order management system that uses technology to optimize picking and packing, disseminate information to the voice picking system, and direct packout operations."

The WCS has a much more granular view of facility operations than the WMS, including activity levels on the sortation system and at the packout stations. It uses this information to optimize the subwaves based on order profiles, item location, and workloads.

This process is key to the fulfillment center's operations. "The warehouse control software ties all the planning together," Castaldi says. "For example, online orders come down from the enterprise system and are dropped into the WMS. The WMS acknowledges the orders, which are passed to the WCS to create the optimized subwaves and maximize the technologies used to pick and pack them."

Keep it Simple

The controls on the WCS required simple training processes. OTC workers were schooled in the few steps that involved them; they didn't need to grasp the larger ideas behind the overall warehouse management.

For example, one job might be loading products on a sorter. Workers place products in trays with the bar code facing up. They don't need to understand how this makes up an order, or what part

of the order it is. That would only add unneeded complexity.

The same principle holds for voice picking. The system directs workers where to go, what to pick, and how many items to put in the tote.

"To fill hundreds of thousands of orders, use the Henry Ford assembly line method," says Castaldi. "Make workers experts on a simple task, then have them repeat it. They will make fewer mistakes, so speed and efficiency will increase."

This approach contrasts with OTC's previous system, where each worker picked and packed an order for which they bore sole responsibility. Now, multiple workers—each efficient at their task—touch an order.

The WCS batches groups of orders by using various parameters—such as number of units in an order and the type of box needed to ship it—to determine what needs to be married for the picking process. Workers pick items from their assigned areas for a batch of orders. These picks are then brought together—timed closely—and delivered to the sorter, which allocates each part to the appropriate order. Picked and exploded, the orders are then assembled.

"Because we were implementing a lot of technology simultaneously, we tested for a few months to ensure the systems were working as planned," says Wagner. "But training only took a few weeks, because we were simplifying everyone's tasks."

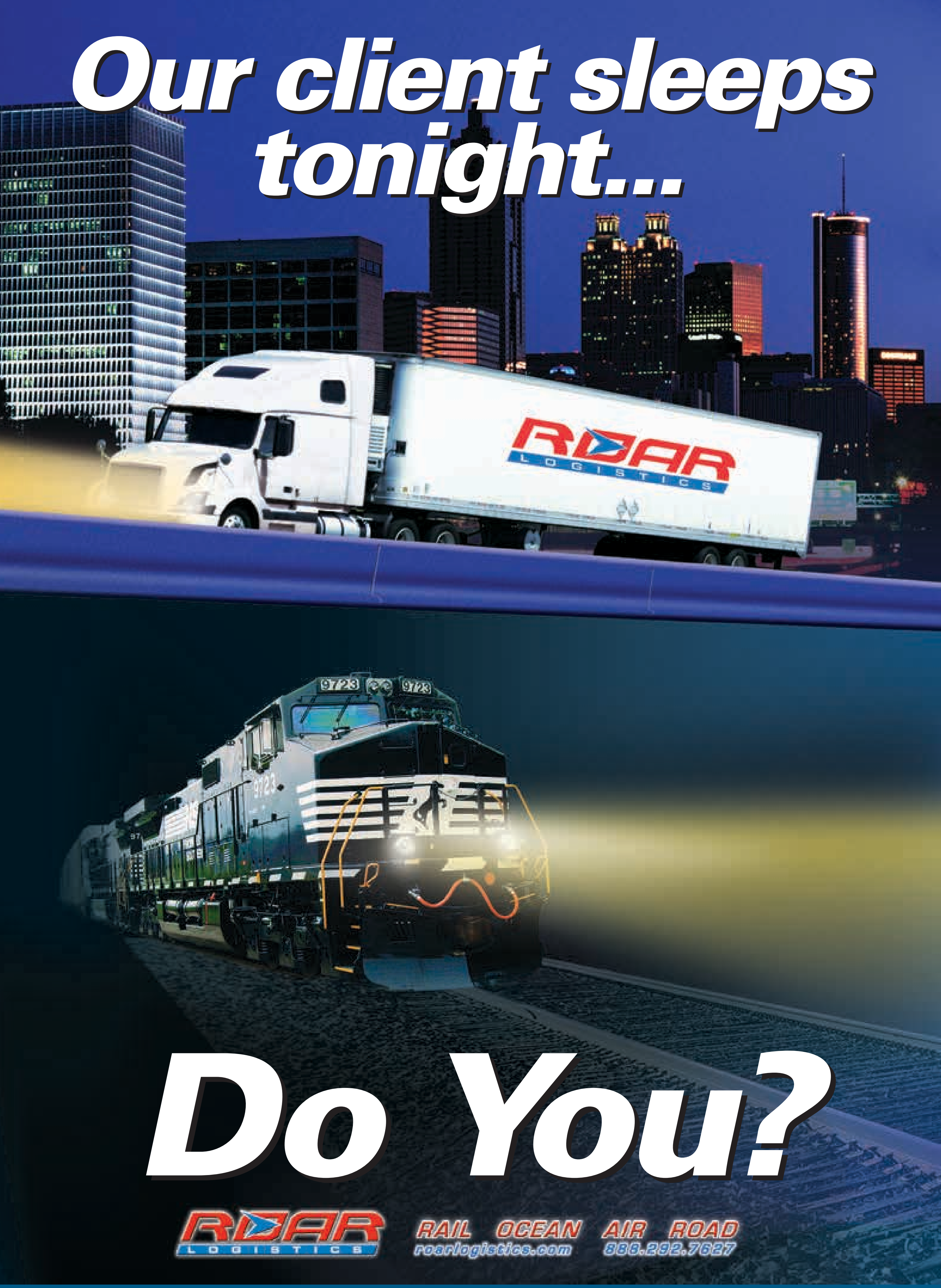
For Whom the Picking Tolls

An ancillary benefit of the approach was that picking took less of a toll on OTC workers. "In the past, we had high turnover rates simply because of employee fatigue," says Wagner. "The high number of SKUs required a lot of walking, even though orders were batched. With the new systems, our employees have gone from walking up to 10 miles per day to less than one mile. This has improved not only productivity, but also workers' overall job satisfaction."

Wagner gives kudos to the new system's performance across a range of business parameters. "We've been able to achieve a significant productivity increase," he notes. "Further, we've increased picking and packing accuracy throughout our entire facility, which has dramatically reduced customer re-ships. Finally, the number of days it takes for us to ship orders to customers has dropped significantly."

Since implementing the new system, OTC has increased productivity by 58 percent, reduced re-ships by 21 percent, and cut order-processing time by 12 percent.

"The system has enabled us to manage the startling growth in direct-to-consumer business facilitated by digital communications. Additionally, it has helped us prepare for future growth," says Wagner. "It's hard to imagine our current business without it." ■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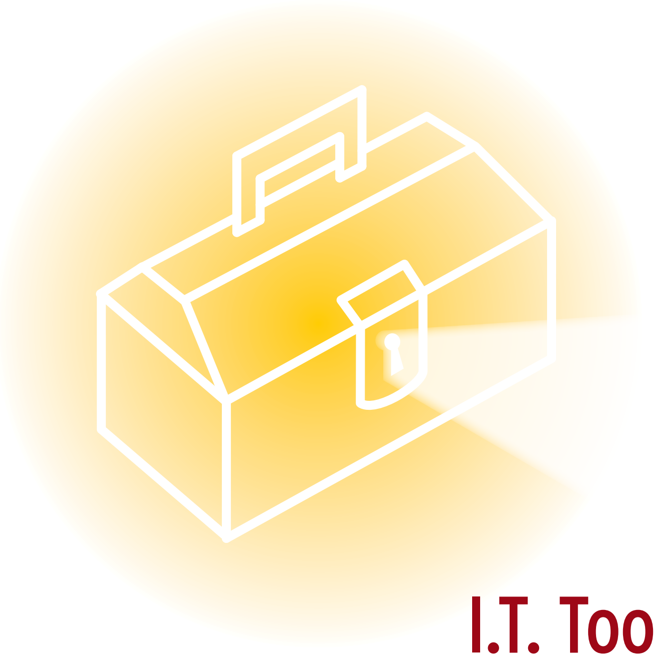


I.T. Toolkit

by Cindy H. Dubin

Inventory Replenishment: A Push in the Right Direction

Close-out retailer Tuesday Morning uses a WMS to allocate and ship a constant stream of new products to stores, keeping customers happy every day of the week.

Never the same day twice. It could be the title of a James Bond movie, but it's a reality for Tuesday Morning, a Dallas-based close-out retailer. The products that enter its distribution center (DC) today will be completely different from what comes in tomorrow.

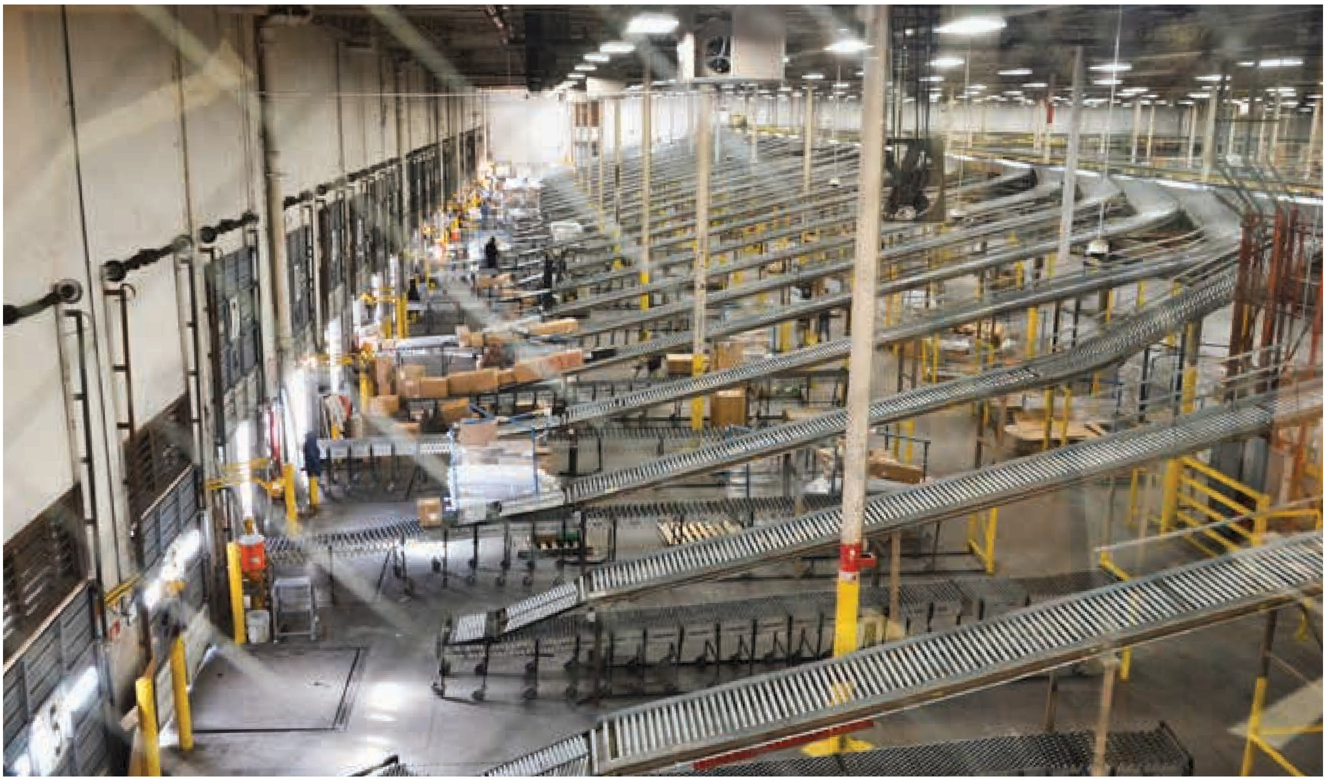
Specializing in selling deeply discounted home furnishings, housewares, and gifts, the company's net sales for fiscal 2011 reached $812.8 million. Most of these items are imported and brought into the company's Dallas distribution center for unpacking and re-sorting for shipment to more than 850 stores across the United States.

Since Tuesday Morning's inception in 1974, sorting the items upon receipt was primarily a manually driven process directed in later years by a proprietary warehouse management system (WMS). As the company added retail locations and brought in more product, the rudimentary system couldn't keep pace with growth. So Tuesday Morning sought, and found, a WMS that has become the hub of its entire distribution process.

A Unique Business Model

The chain derives its name from the day on which it holds its 10 major monthly sale events, which coincide with the retail industry's peak selling seasons. It receives new merchandise shipments weekly from Europe, Africa, South America, and Asia, as well as domestic distributors.

"We specialize in goods found in name-brand department stores, and we only provide first-quality products—no seconds or rejected items, only overbuys,"



Tuesday Morning's Dallas distribution center prepares about 100 truckload shipments daily to distribute products to 850 stores across the United States.

says Mike Hester, senior vice president of supply chain at Tuesday Morning. "We buy from companies all over the world that are going out of business."

The facility typically receives about 100 loads daily. All incoming goods arrive at the Dallas DC, where they are split for shipment to retail sites that span 43 states. Corporate headquarters determines what each store will receive based on the store's inventory and demographics. While this "push model" of inventory replenishment could describe the business model for any number of retailers, Tuesday Morning's model is unusual because every stockkeeping unit (SKU) arriving at the DC is new. "Each time we receive an item, it's like receiving it for the first time," says Hester.

Product is shipped via a local private fleet to the Dallas/Fort Worth area, and by contract carriers to the remainder of Tuesday Morning's stores.

On the surface, the process sounds fairly straightforward, but Hester says implementing it was anything but. As the company realized rapid expansion in 1994, growing from 200 to 400 stores, handling the high number of SKUs with an in-house WMS and manual system was creating bottlenecks. Workflow and case splitting was managed on paper spreadsheets.

"Our business was becoming complex because we never received the same item twice," explains Hester. "We didn't have the opportunity to know how we were going to manage inventory, because we handle items for the first time when they arrive and probably won't handle them again. When you manage manually, it's hard to be nimble and flexible. We had outgrown our old system's capabilities."

After the company determined its growth was too rapid to continue with the existing system, Tuesday Morning decided to install automated materials handling systems such as high-speed sortation devices, conveyors, and pick/pack modules, as well as a WMS that could control yard management activities, and inbound and outbound transportation.

Finding a solutions provider proved challenging. Most WMS are slanted toward traditional business models. "We needed a provider that understood our unique business model, and could integrate several systems into a single WMS that would enable us to carry out our model," Hester says.

The search led Tuesday Morning to Perrysburg, Ohio-based Interlink Technologies, a WMS provider since 1986.

Triple-Digit Improvement Rates

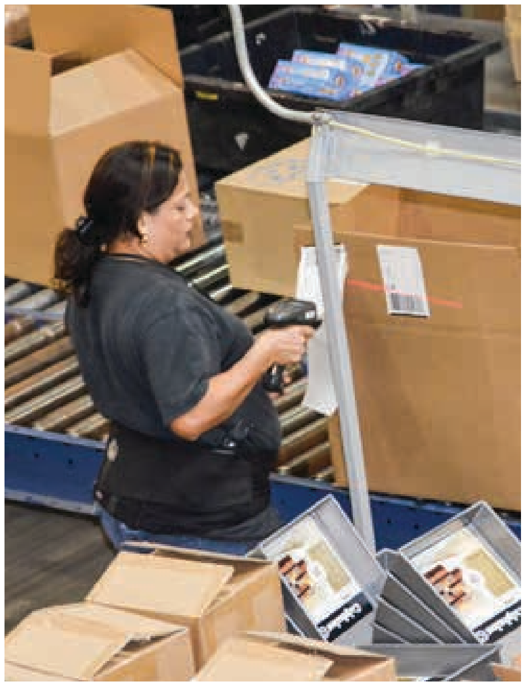
Tuesday Morning chose to work with Interlink because it was willing to customize its *WHSe-LINK* solution to suit the retailer's unique business model. The two companies began working together in 1994 to install *WHSe-LINK*, focusing primarily on managing inbound materials and splitting processes. From purchase to implementation took about four months.

The WMS incorporates transportation and yard management modules to manage the plethora of incoming product and plan for its outbound shipment. Other tools integrated into the WMS include an allocation

system, pick-and-pack-to-light processes, an accounting system that keeps pace with Tuesday Morning's ever-changing items list, and e-commerce capabilities.

When product arrives at the Dallas DC, it is unloaded, then *WHSe-LINK* and the allocation system communicate to determine the amount of inventory that can be provided to each store. Products are directed to one of three locations: warehouse rack, storage trailer (of which there are 300 at any given time), or outbound trailer.

The storage trailers are grouped by destination or region. The *WHSe-LINK* yard management module manages the storage trailers and tracks first-in/first-out order, ad codes, item numbers, and the store for which the product is destined. It takes about one week to build up enough volume in the trailer to dispatch the truck.



The *WHSe-LINK* WMS directs workers receiving new product and picking orders for shipping.

Outbound trailers (approximately 400 at any given time) are given a route definition, and each trailer typically makes stops at four stores. Once the trucks are loaded, the WMS reports the shipping confirmation to the accounting system, and the stores are billed. Tuesday Morning sends out about 100 trailer loads per day.

"Almost from the outset, we had the ability to keep pace with our growth and be more flexible in how we handled and distributed goods to the stores," says Hester.

Since installing *WHSe-LINK*, Tuesday Morning has seen a 600-percent improvement in productivity, a 350-percent improvement in product throughput, and an accuracy rate of more than 90 percent.

Supply Chain Hub

Such numbers enticed Tuesday Morning to tackle additional uses for the Interlink WMS. For example, the retailer has spent the past five years focusing on Internet sales. After establishing a DC—located just one mile from the main facility—dedicated to Internet fulfillment, Tuesday Morning installed *WHSe-LINK* to handle order fulfillment and interface with FedEx for shipping.

Tuesday Morning is also relying on Interlink to put its DC bypass plan into action. Rather than bringing overseas shipments into the DC, product would be received at U.S. ports of entry, then allocated in *WHSe-LINK* and shipped directly from that port to the retail stores.

In addition, the retailer is working with Interlink to evaluate how non-conveyable items, such as furniture, are being received, processed, and shipped.

"We still handle this product manually. We require a longer lead time for bringing the product in because it takes us longer to process," says Hester. "Our goal is to shrink the lead time for these large, non-conveyable items to a window that is more typical of the lead time on our other products." He hopes to have this evaluation completed by second quarter 2013.

Whether shipping to stores or direct to consumers, *WHSe-LINK* has become the hub of Tuesday Morning's supply chain.

"It supports our business model completely by giving us a richer supply chain, and allowing us to be more nimble in serving our stores and our customers," says Hester.

And that's a good deal for everyone involved. ■

White Paper Digest

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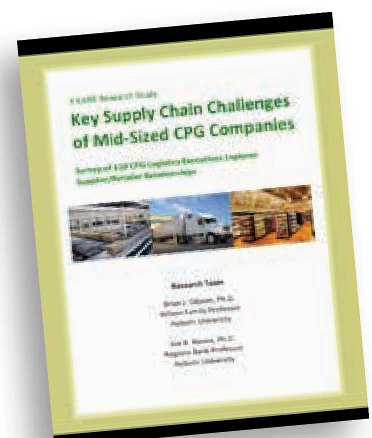

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TITLE: ***CSCO View of Resilient Supply Chains***

DOWNLOAD: *http://bit.ly/XwwMUg*

SUMMARY: In the wake of recent disasters such as Hurricane Sandy, many companies feel the need to have a resilient supply chain to help mitigate risks and reduce the effect of disruptions. AberdeenGroup's recent report, *CSCO View of Resilient Supply Chains*, examines the concept of a resilient supply chain, evaluates capabilities that companies currently have in place, and identifies the gaps. Download this whitepaper to learn how to shore up your supply chain before the next disruption occurs.

C3 Solutions

TITLE: ***Yard Management Systems – A Guide to Better Understanding The Market, the Software, and the Benefits***

DOWNLOAD: *http://bit.ly/WGJFwB*

SUMMARY: If you think that Yard Management Systems (YMS) are only of benefit to huge companies with vast, complex yards, then you'll find this whitepaper interesting reading. Learn the different operations YMS can manage, the economic benefits you can realize from implementing a YMS, and the factors to consider before investing in the technology. This whitepaper can help you understand not only who is investing in yard management software, but why.

DHL

TITLE: ***Partners in Efficiency – Lessons in Supply Chain Excellence For Life Sciences and Healthcare Companies***

DOWNLOAD: *http://bit.ly/11P3NCC*

SUMMARY: The process of delivering a drug to market, and understanding the market itself, can be confusing for any logistics professional. This whitepaper explores using flexibility as a weapon against increased competition, investigates mandatory Quality Assurance and Compliance regulations, and illustrates how cost effectiveness can help margins. Following the best practices highlighted in this whitepaper can help life sciences, healthcare, and procurement professionals choose high-quality supply chain partners.

Tompkins International

TITLE: ***Supply Chain Priorities for the High-Tech Industry – Top Seven Success Factors for Value Creation***

DOWNLOAD: *http://bit.ly/WkTmjs*

SUMMARY: All supply chain professionals want their companies to gain value through profitable growth, higher operating margins, and capital efficiency. In this whitepaper, Tompkins International lays out seven strategies to help high-tech industry professionals optimize their supply chain operations in order to achieve these goals.

World Economic Forum

TITLE: ***New Models for Addressing Supply Chain and Transport Risk***

DOWNLOAD: *http://bit.ly/W8eGeL*

SUMMARY: Most companies have risk management protocols in place to handle localized supply chain and transport network disruptions. But events such as Hurricane Sandy and the 2008 global financial crisis illustrate that risks outside the control of individual organizations can have cascading and unintended consequences. This whitepaper recommends risk mitigation approaches to position your company for the future.

WhitePaperDigest

Purolator

TITLE: ***Develop Your Scalable Canadian Supply Chain***
DOWNLOAD: *http://bit.ly/Vss7F9*
SUMMARY: As businesses look to improve efficiency and cut costs, many logistics managers have begun rethinking existing practices and identifying smarter methods to manage supply chains. This is especially important for businesses that ship to Canada and have to address added hurdles such as border clearance and international distribution processes. In this whitepaper, Purolator explains the need for flexibility in the global supply chain so that services can be ramped up or down based on need.

Vitronic

TITLE: ***Camera-Based AutoID Systems–Boost Profits Through Smarter Distribution***
DOWNLOAD: *http://bit.ly/Xx5rSD*
SUMMARY: In today's fast-paced, consumer-driven world, modern distribution centers need every edge they can get when it comes to improving efficiency. Thanks to advances in sensors and microprocessors, camera-based autoID bar-code readers have become similar in cost to older, laser-based models while offering the higher speeds, improved accuracy, and greater flexibility modern distribution centers need to succeed. This whitepaper highlights the advantages of upgrading to an autoID system, and how it can make your distribution center more efficient.

LEGACY Supply Chain Services

TITLE: ***Rapidly Improve the Performance of Your Warehouse***
DOWNLOAD: *http://bit.ly/YsOmiP*
SUMMARY: What if you were able to improve warehouse performance, and see sustainable results within six to 12 months? Most warehouses never change once they are established and running. This whitepaper shows you how to identify and implement the policies, procedures, and technology to help improve your distribution operations.

C.H. Robinson

TITLE: ***Gaining Efficiencies Through LTL Outsourcing***
DOWNLOAD: *http://bit.ly/VivyfX*
SUMMARY: Outsourcing less-than-truckload (LTL) transportation offers rich opportunities for improving efficiency and reducing transport costs. Companies that outsource a freight service such as LTL can benefit from strong technology, management of multiple providers, expertise, and improved service levels. This whitepaper looks at the challenges and benefits of outsourcing LTL transport.

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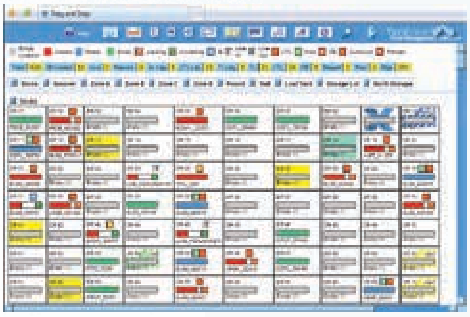

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INBRIEF

NEW SERVICES & SOLUTIONS

//Technology//

LexisNexis' *SmartWatch* monitoring system provides a visual dashboard and alerting tool that enables users to monitor thousands of suppliers for disruptive events that might affect the supply chain. The tool leverages LexisNexis' global news content to rank concerns based on each organization's unique risk profile, allowing users to track trends over time, avoid business interruptions, and develop liability mitigation strategies.

Finnair Cargo initiated weekly MD-11 freighter flights via its new Brussels hub, connecting Brussels with Finnair's Helsinki hub, New York's John F. Kennedy Airport, and new destination Chicago O'Hare. Finnair Cargo's Helsinki hub connects to Finnair's 14 Asian destinations.

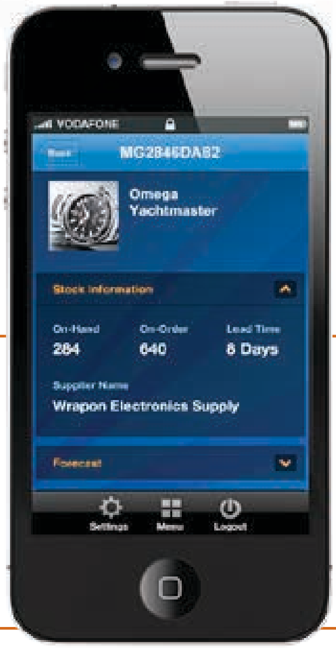
Oracle released new versions of *Oracle Transportation Management* and *Oracle Global Trade Management*. The releases include new transportation and global trade management capabilities including enhanced fleet management, transportation sourcing, business intelligence, and planning; rail transportation; workflow and event management; freight payment; billing and claims; and document and customs management.

Terra Technology's enhancements to its *Demand Sensing, Multi-Enterprise Inventory Optimization and Transportation Forecasting* software provide 3D mapping capabilities, increased engine efficiency to accommodate larger global implementations, and new exception management features that provide more accurate demand predictions.

Catapult's *Spring Board* software allows non-vessel-operating common carriers and steamship lines to accept shipper rate request bids in any Excel format; map them to a master template; and manage bids in the cloud, allowing ocean tender management teams to work simultaneously.

Ryder System launched a mobile application of its onboard telematics system, RydeSmart 3.0, for the iPhone and iPad. The app allows RydeSmart customers to track vehicles and access real-time fleet data from a mobile device at any location, 24/7.

Blue Ridge developed a mobile application to simplify inventory replenishment and increase product availability for retail stores. Users can count inventory to create accurate orders, forecast demand, and enable order approval.



CargoSmart launched *VisibilitySmart*, a solution that alerts shippers to potential shipment delays. The new solution's monthly scorecards help shippers and carriers measure on-time performance.

Designed to increase efficiency and productivity in narrow-aisle applications, the **Jungheinrich** Warehouse Navigation system uses transponder RFID technology to control guided Jungheinrich very-narrow-aisle lift trucks within warehouse aisles. Warehouse managers may find up to a 25-percent productivity increase, depending on the application environment.

Roadnet Technologies launched its MobileCast vehicle GPS tracking software on the Android smartphone operating system. The software enables companies to see fleet transportation routes in real time; change routes based on occurring events or conditions, such as traffic or customer needs; and view exact driver locations and respond to unexplained stops.

Castell Interlocks' *Salvo DockMonitor* data-gathering and analysis system monitors and reports on loading dock activity, allowing users to track efficiency and frequency of dock usage, monitor load and unload times, compare shift performances, log carrier information, schedule dock usage maintenance, and measure maintenance downtime.

SkyBitz released the Falcon Series GXT100, a global positioning satellite asset-tracking solution for North American 3G/4G cellular networks. The new product is designed to provide actionable information to shippers such as stop, start, idle, arrival and departure times; geo-fence-based alerts; speed and mileage driven; and time between stops.

InMotion Global launched *InMotion Global TMS*, a free transportation management system (TMS). The software provides logistics managers with the ability to manage truckload, less-than-truckload, rail, ocean, and air shipments.

Enhancements to **FedEx Corp.'s** SenseAware service provide shippers with broader international availability and the ability to gain near-real-time information on shipments with carriers outside the FedEx network. The

APL Logistics and **VASCOR** formed a joint venture to serve the supply chain needs of India's automotive sector. While the new company plans to offer a full range of inbound, outbound, and aftermarket parts solutions, it will initially focus on providing finished-vehicle logistics, including rail and containerized transportation, and yard management.

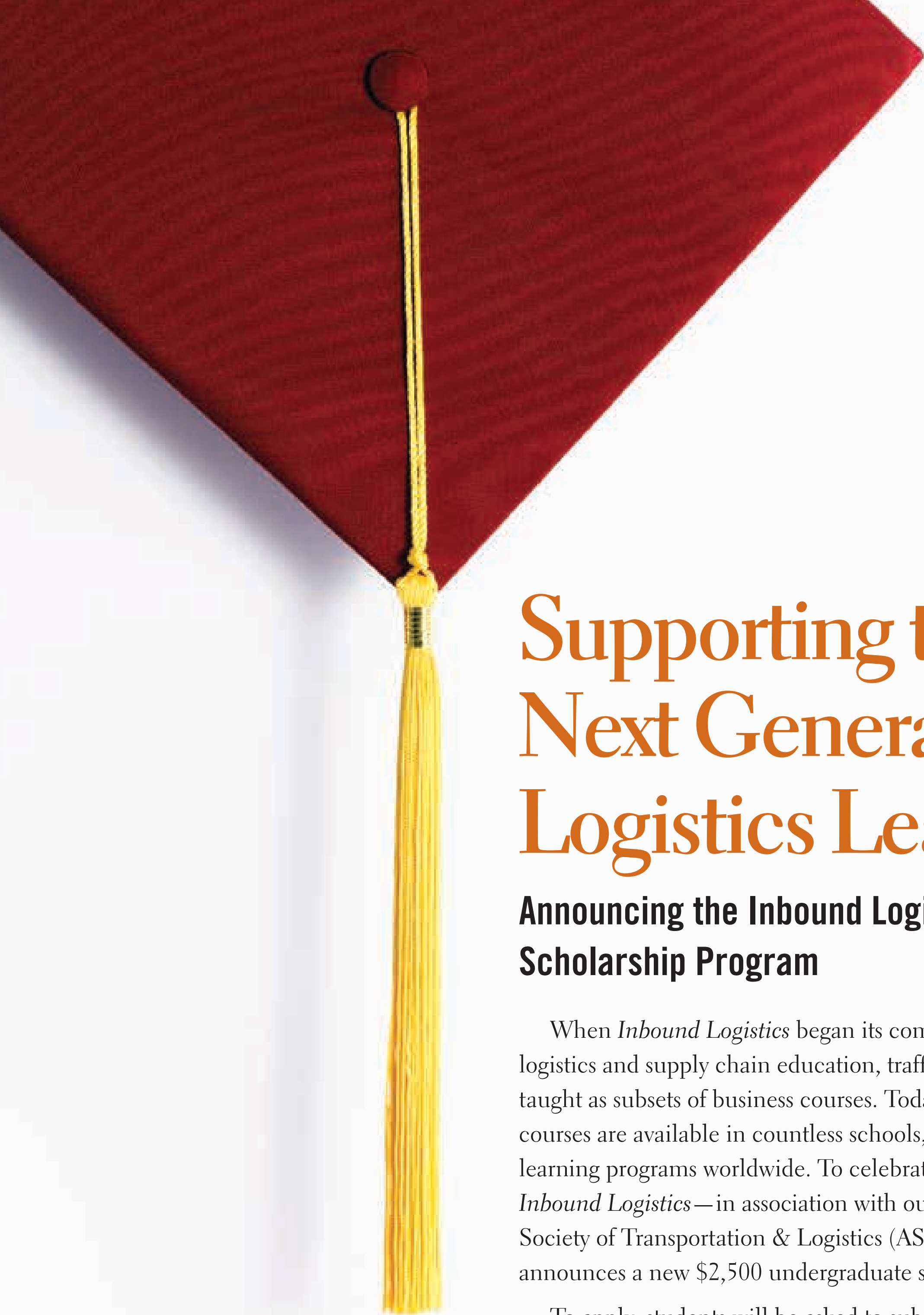
release of the next generation of the SenseAware device offers more accurate location information, improved cellular connectivity, and longer battery life.

The newest version of **Trade Tech's** *Trade Rates Pricing Suite* produces accurate rate quotes in 90 seconds or less for global users. The software's user-friendly interface allows operators to use it with no training.

//Products//

Kardex Remstar's Shuttle Vertical Lift Module now features a light pointer that directs an operator to a specific part location using a

Freight Wing introduced chassis side skirts for intermodal haulers that provide the same fuel-saving benefits as vans. The new chassis side skirts are available for 46-foot trailers, and for most other chassis trailers of various lengths.



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Announcing the Inbound Logistics/AST&L Scholarship Program

When *Inbound Logistics* began its commitment to advancing logistics and supply chain education, traffic and transportation were taught as subsets of business courses. Today, global supply chain courses are available in countless schools, and through distance learning programs worldwide. To celebrate that achievement, *Inbound Logistics*—in association with our partners at the American Society of Transportation & Logistics (AST&L)—proudly announces a new $2,500 undergraduate scholarship.

To apply, students will be asked to submit a 2,000-word essay on why they chose a logistics and supply chain career, and how they envision that career impacting the company they will work for, as well as the U.S. and global economy.

Submissions must be received by March 15, 2013. One winner will be awarded the scholarship in June 2013, and featured in our June 2013 careers and education issue. For more information, email scholarship@inboundlogistics.com

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Presto Lifts' DXL Series Compact Scissor Lifts feature a smaller footprint than standard lifts, while offering 2,000-pound lift capacity for a variety of work areas, including assembly, repair, and inspection applications in factories, warehouses, retail stores, and repair shops.

Q Products & Services introduced PalletQuilts and CargoQuilts, which increase reefer performance or provide a reefer alternative by protecting products against cold, heat, and condensation.

Daifuku Webb Holding Company's DUOSYS Automated Storage and Retrieval System (AS/RS) can act as a sortation system, buffering and sequencing items in less floor space with fewer personnel than traditional options. Additionally, it operates two cranes simultaneously in the same aisle to maximize throughput.

UPS announced a new express airfreight service, UPS Worldwide Express Freight, for urgent, time-sensitive, and high-value international heavyweight shipments. Shippers can move pallets weighing more than 150 pounds within UPS's global air network from 37 origins to 41 destination countries and territories. The service includes overnight shipping from the Asia Pacific region, Europe, and the Americas to the United States, and two-day shipping to Europe from Asia Pacific, the United States, and the Americas.

//Transportation//

3PD launched 3PDirect, a pay-per-use national network that offers first-to-last-mile delivery, assembly, and installation of heavy goods throughout the continental United States. The company also launched a secure Web portal where businesses can obtain quotes, open an account, and immediately begin shipping via the new service.

FedEx Express extended cutoff times by two hours for outbound shipments from Taiwan to the United States to give shippers more time to prepare and manage exports.

TOTE Inc. plans to construct two new state-of-the-art containerships for the Puerto Rico trade, with options for three more vessels for additional domestic service. The ship design accommodates five times more 53-foot containers than current ships in Puerto Rico, and will allow for the transport of varied products, including motor vehicles. The ships will include expanded volumes for refrigeration equipment, critical to ensure that pharmaceuticals, produce, and other perishables vital to Puerto Rico's consumer base are delivered in the best possible condition.

Improved less-than-truckload (LTL) service times are now available to **Averitt Express** customers in eastern Canada. LTL shipments moving from selected points within Averitt's distribution network receive faster transit to eastern Canada, including Toronto, Montreal, Ottawa, and Quebec City.

// Services //

DHL opened a hub and airline facility at the Miami International Airport service center to meet the growing needs of customers who ship to and from Latin America.

L&M Transportation Services opened a new branch office in Othello, Wash., to handle produce and dry freight truckloads for the Pacific Northwest, and to act as a clearinghouse for oversupplied fresh produce growers and packers.

The Kearney Companies and **Page International** announced a joint venture to establish warehouse services at the Port of Savannah, Ga. The facility will primarily support containerized shipments of export paper, cotton, lumber, metals, food products, and consumer goods, and will have direct rail service with CSX.

Dupré Logistics expanded its Houston area operations with the addition of a new operations and maintenance facility in Channelview, Texas. The hub serves new and existing customers of Dupré's crude oil, energy distribution, and site and private fleet services.

SDV Global created a subsidiary company in Norway to extend its network to Scandinavia. A second office at Oslo-Gardemoen Airport is dedicated to airfreight operations, and new branches will follow in Bergen and Stavanger by 2014. The expansion provides logistics solutions for the oil and gas industries.

Penske Used Trucks' Web site now enables users to produce side-by-side comparisons of up to five commercial trucks, semi-tractors, trailers, and related equipment.

CAPS opened a new shipping container service center in Lowell, Ark. The facility primarily serves liquid container rental users, providing them with flexibility and quicker response times. The facility's centralized location reduces haul lengths for improved transportation service.

CALENDAR

YOUR LOGISTICS DATEBOOK

March 10-12, 2013, IWLA Convention & Expo, Orlando, Fla. No other event grants you access to warehouse-based 3PLs and 3PL thought leadership. You will leave Orlando with ideas to grow your business and increase your bottom line. From training by Pat Williams, vice president of the Orlando Magic, to the latest in using social media to market your business, the IWLA Convention brings you the best education and networking.

847-813-4699
www.iwla.com

March 10-12, 2013, AirCargo 2013, Las Vegas, Nev. AirCargo includes informative educational sessions that address topics such as branding, security, and business operations, keeping attendees informed about industry developments that affect their businesses and providing them with management tools and tips that can increase efficiency and profitability. There will be time to network with business associates and potential new business partners in the express delivery, airfreight forwarding, and expedited motor carrier industries.

703-361-5208
www.aircargoconference.com

March 18-19, 2013, American Association of Port Authorities Spring Conference, Washington, D.C. This event examines maritime issues relevant to all Western Hemisphere ports, including export and federal port security initiatives, economic development opportunities, and infrastructure funding and policy reform.

703-684-5700
www.aapa-ports.org

March 19-20, 2013, 5th Annual Georgia Logistics Summit, Atlanta, Ga. The Georgia Logistics Summit is packed with valuable business information and networking opportunities. Keynote speakers will cover topics such as multichannel logistics operations, shifts in global trade routes and sources, new transportation legislation, trucking safety regulations, investment in infrastructure, fuel prices, demand for detailed supply chain visibility, volatile global and domestic markets, and workforce training and retention.

912-966-7867
www.georgialogistics.com

April 15-17, 2013, National Logistics & Distribution Conference (NLDC), Atlanta, Ga. Organized for senior-level supply chain executives by Georgia Tech's Supply Chain & Logistics Institute, NLDC offers three educational tracks—Identifying Change: Supply Chain Tipping Points; Digital Change: Technology's Impact on Customers and Commerce Within the Supply Chain; and Leading Change: Executive Leadership in Strategic Planning.

800-998-6517
www.nldcinfo.com

April 15-18, 2013, ASME Joint Rail Conference, Knoxville, Tenn. This American Society of Mechanical Engineers (ASME) conference promotes discussion of technological advances relevant to railroad operations and engineering. Topics to be discussed include railroad infrastructure, planning and development, and energy efficiency and sustainability,

717-242-4972
www.asmeconferences.org/JRC2013

April 17, 2013, Momentum 2013, Kansas City, Mo. KC SmartPort hosts its second annual industry-briefing event highlighting the third-party logistics industry. A panel of senior level 3PL executives will discuss current and future trends.

816-374-5640
www.kcsmartport.com

April 21-24, 2013, COSTHA Annual Forum and Expo, San Diego, Calif. The Council on Safe Transportation of Hazardous Articles (COSTHA) helps attendees navigate the evolving regulations governing the shipping of dangerous goods. The program explores new technologies, legal trends, and strategies for protecting corporate profits through enhanced compliance, risk management, and training.

703-451-4031
www.costha.com

April 21-24, 2013, NASSTRAC Logistics Conference & Expo, Orlando, Fla. Hosted by the National Shippers Strategic Transportation Council (NASSTRAC), this conference attracts transportation and supply chain executives from manufacturers, retailers, and distributors, as well as 3PLs and carriers. Educational sessions feature logistics service provider executives discussing issues facing the trucking and logistics sectors; and shippers explaining best practices in their supply chain strategies. The event also features a full exhibition showcasing new transportation services and solutions.

952-442-8850 x208
www.nasstrac.org

May 1-2, 2013, IANA Intermodal Operations and Maintenance Seminar, Oak Brook, Ill. This Intermodal Association of North America (IANA) event is designed for intermodal operations and maintenance specialists who want to learn about the latest trends and challenges in their segment of the industry.

301-982-3400
www.intermodal.org

May 5-10, 2013, Supply Chain Logistics Management, Lansing, Mich. Offered by Michigan State University's Executive Programs, and co-sponsored by the Council of Supply Chain Management Professionals, this program emphasizes supply chain integration, performance measurement, technological application, organizational dynamics, and the lessons learned from global world-class logistics organizations.

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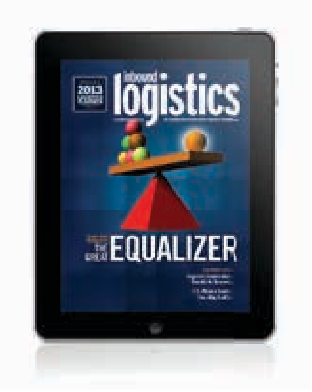

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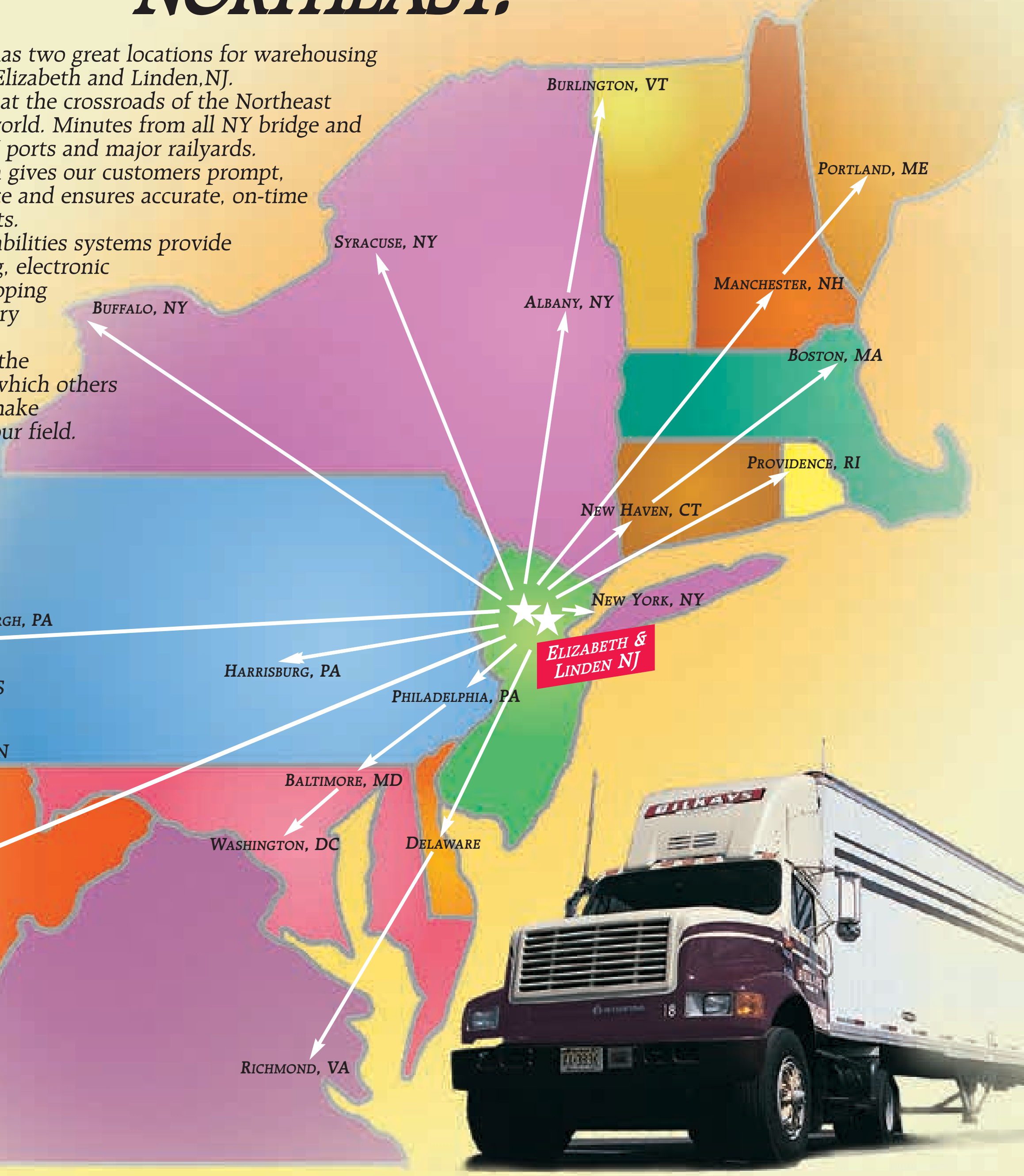

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