SPECIAL
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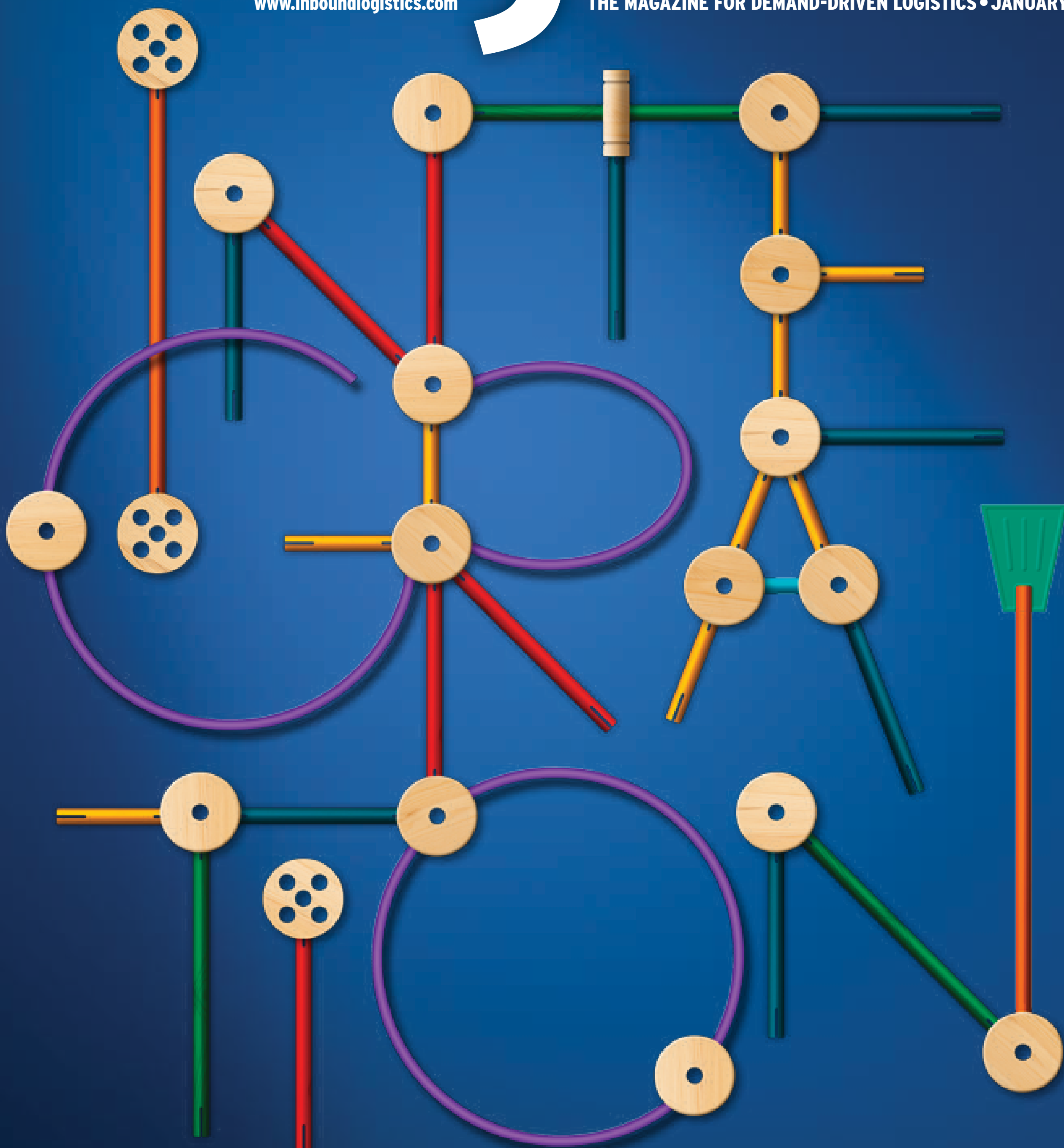
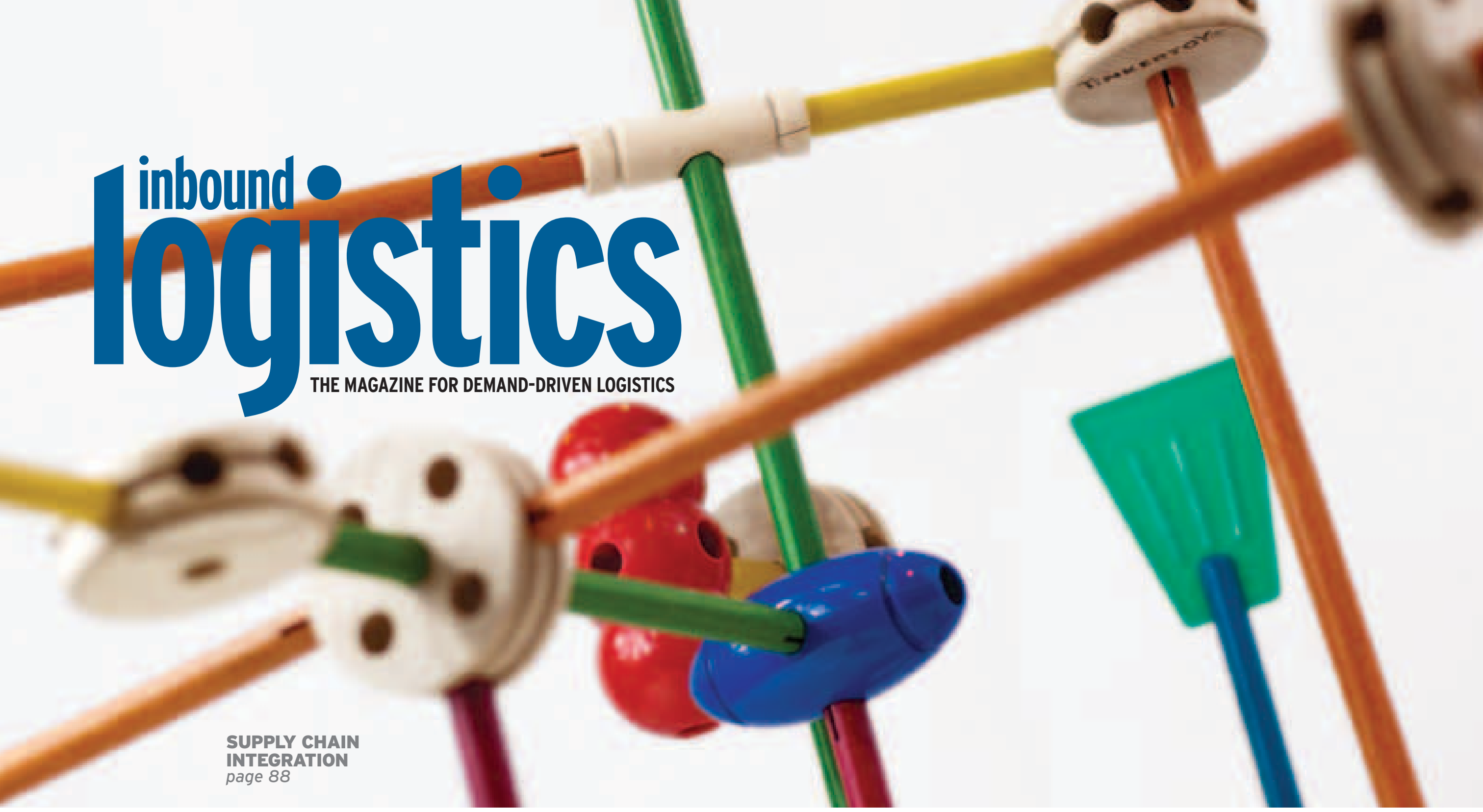


SUPPLY CHAIN INTEGRATION:
Building Innovative Solutions



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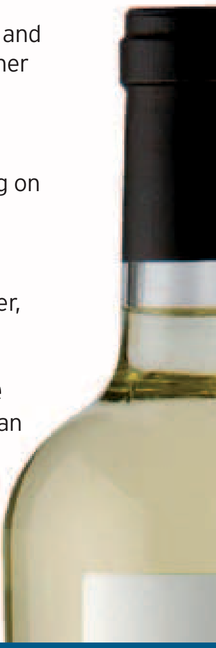

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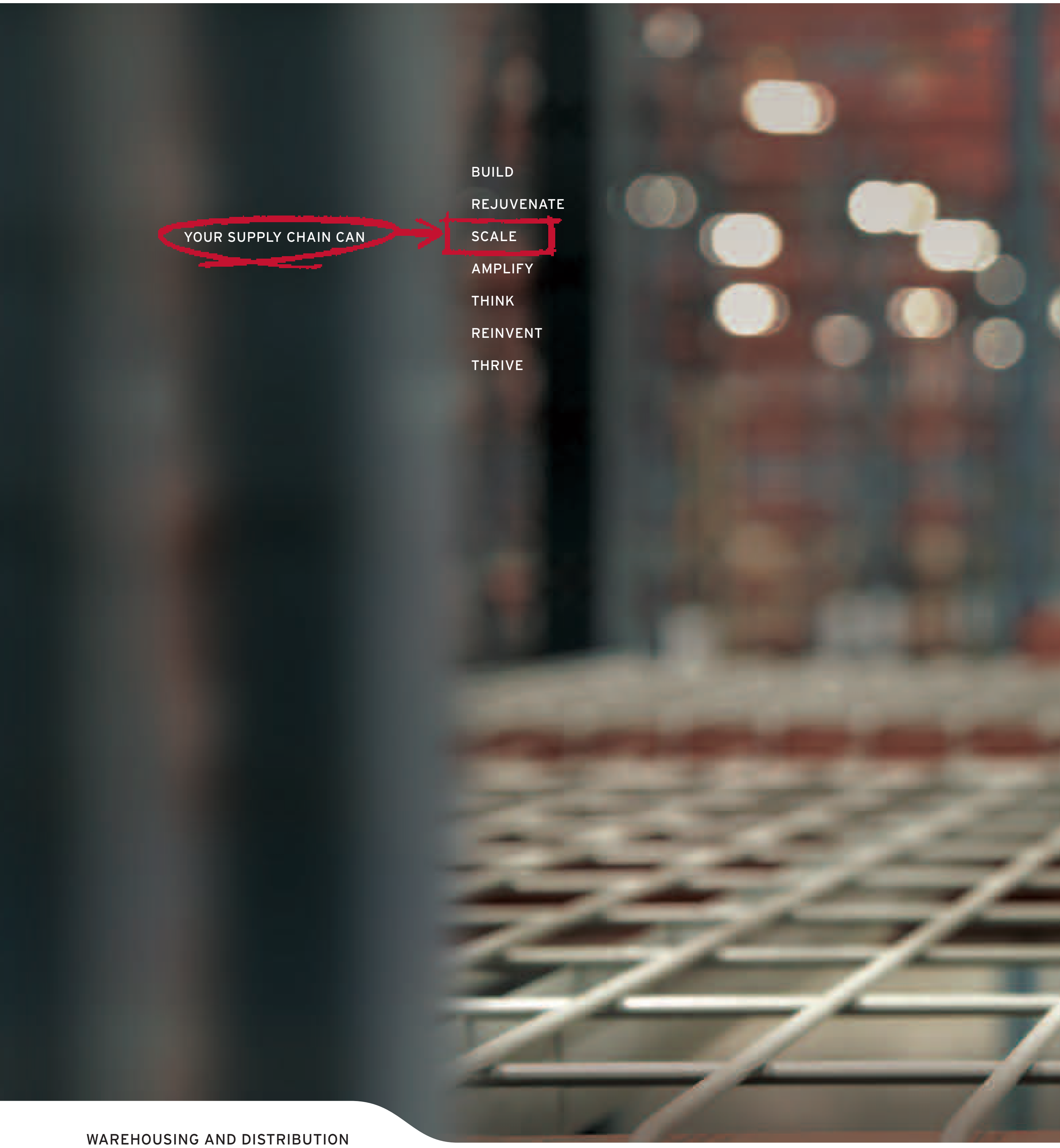

WAREHOUSING AND DISTRIBUTION
MANUFACTURING SUPPORT
REVERSE LOGISTICS AND REPAIR
SERVICE PARTS LOGISTICS
MATERIALS MANAGEMENT
BUSINESS PROCESS IMPROVEMENT
TRANSPORTATION MANAGEMENT
SUPPLY CHAIN CONSULTING

CHECKINGIN

by Keith Biondo | **Publisher**

A Lost Art?

Strength of will. Toughness. The refusal to be deterred from the goal no matter what impediments stand in the way. Do we have much of that in our culture today? In our leaders? In our own businesses?

Retracing the Trails of the Iron Horse (page 199) takes us back to a simpler time in America's past, where strength of will, toughness, and an indomitable drive to succeed helped create a fundamental part of the transportation network that fuels much of our economic success today. The underpinning of that effort more than 150 years ago was a concept called Manifest Destiny—"to overspread and possess the whole of the continent for the development of our great experiment in liberty and self-government." That call motivated strong-willed people to create pathways of commerce and growth where none existed before. Sadly, that concept has fallen out of favor in some quarters these days.

Is it just the varnish of history that makes the past seem so different from today? Or have we truly lost something in the intervening years that could drive us to a fuller measure of economic success?

Former Pennsylvania Governor Ed Rendell seems to think so. "Policy-makers in Washington need to make smart infrastructure investments a priority because if we don't, we will only fall further behind the rest of the world," he said in a recent speech. He was specifically referring to a World Economic Forum report that concluded, among other troubling findings, that while the United States is the number-one global economic market, it ranks 23rd in port infrastructure behind countries such as Namibia, Barbados, and Estonia.

And as the article *TIGER Grants: Road Work Ahead?* (page 127) illustrates, we continue to spend plenty of our future generations' yet-unearned treasure on bike paths and lightly used light-rail projects. Add road, rail, and bridge infrastructure needs to the mix, and it is clear we need a better transportation vision and the fortitude to make it real.

Some modern industry leaders have exhibited the toughness and vision to accomplish much from little or nothing. The late Don Schneider of Schneider Trucking and Pat Quinn of U.S. Xpress are two who come to mind. And there are many others in transportation and logistics, unseen and unsung, facing the seemingly endless series of challenges and impediments required to get product to the demand point as seamlessly, quickly, and efficiently as possible.

Who are they? Look in the mirror. You, and others like you, take a never-ending stream of variables and integrate them like Tinkertoys (page 88), crafting them into a thing of beauty, answering the call, the need, and the demands of millions of customers around the globe one billion times each day. Tough, practical, unfazed by the specter of supply chain failure—that is the mark of today's supply chain professionals.

Refusing to be deterred from the goal no matter what impediments stand in your way? Yes, we do have some of that in our culture today. But we need more of it.

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CHECKINGIN

Felecia Stratton

by Felecia Stratton | **Editor**

The Art of Integration

When supply chain disruptions occur, as they did last year during the Thailand floods, Japan earthquake and tsunami, and more, integration grows more important and grabs more attention. But the readers of this magazine have been practicing a higher form of integration for quite some time–demand-driven logistics.

You try new modal mixes, new technologies, blending different solutions, drawing on cross-discipline expertise, constantly tuning and tinkering with the processes and pieces you have to work with. Whether across the state or around the globe, you integrate demand signals all the way back to supply.

And that's why we put Tinkertoys on the cover of this issue. They offer a perfect metaphor for demonstrating how you constantly pull apart principles, processes, and partnerships, plugging in different pieces, and putting it all back together. It's more difficult than run-of-the-mill integration because it's done on the fly to match the transportation and logistics challenges resulting from ever-changing demand signals.

Our cover article, *Supply Chain Integration: Building Innovative Solutions* (page 88), presents five case studies of how shippers are advancing integration within their respective organizations and across the value chain. Each story offers practical advice from practitioners who tinker with their supply chains to help their businesses grow.

In *Sold! Ports Help Close the Deal on Economic Development* (page 227), Merrill Douglas examines how ports are focusing on economic development and forging closer alliances with private and public entities to expand their value proposition. The hope is to attract more logistics business. Welcome to the integrated port complex.

The fundamental value of logistics technology is to integrate functions and business processes inside the enterprise and across trading partner networks. In *Behind the Buzz About Flexible Automation* (page 173), Amy Roach Partridge illustrates how the explosion of e-commerce is changing the way materials handling systems integrate the demand for smaller, more frequent shipments into traditional fulfillment systems.

Deconstruct the title "supply chain manager" and you will find the essence of integration, pulling expertise from different functional areas–purchasing, transportation, logistics–to address problems and find solutions. Tamara Chapman explores the role purchasing managers play in an integrated supply chain in *Minding Everyone's Business* on page 167.

The anchor of this issue is the Logistics Planner (page 335), an in-depth digest of leading carriers, technology, and logistics solutions providers and other experts who help you blend the disparate parts of your supply chain into a seamless, integrated network to meet your demands.

The magazine you are holding is the product of *IL* staff integration: editorial (Catherine Harden, Joseph O'Reilly, Perry Trunick, and a dedicated, talented team of contributing editors–Merrill Douglas, Amy Roach Partridge, Debbie Ruriani), design and production (Michael Murphy, Mary Brennan, Shawn Kelloway), management and administration (Sonia Casiano). They draw on diverse capabilities and talents, providing you with the integrated content–print, web, digital, smartphone, tablet–you need to drive your enterprise to the next level of success. ■

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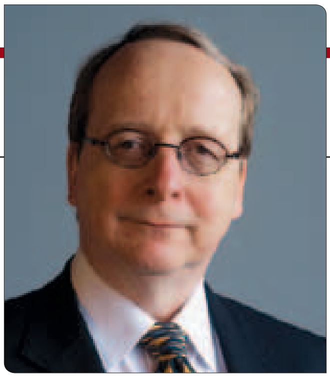

[INPERSPECTIVE]

BY PERRY A. TRUNICK
Associate Editor, Inbound Logistics
ptrunick@inboundlogistics.com

Protesting Economic Ignorance

I'm a big fan of freedom of speech, the right to assemble, and peaceful protest to effect change. But when exercising these rights, protesters must be aware of unintended consequences and potential collateral damage.

At some point in the future, I suspect I'll be explaining the "occupy" movement to my grandchildren when they study the history of the Arab Spring, the global economic crisis, and the various protest movements. Although the results will be calculated by then, right now questions are still flying about why the Occupy group chose to target ports and disrupt commerce.

The disruptions appear to be too short-lived to have had a major impact on supply chains. But while searching the store shelves for the one holiday gift my grandchild most desired, I had to wonder whether its absence was a result of overwhelming demand or a kink in the supply chain.

Perhaps as I describe the events of 2011 to my grandchildren, I'll have an opportunity to insert some lessons on supply chain management that the protesters failed to appreciate. Included might be the point that when you disrupt a supply chain, the effects tend to expand.

Along with large corporations trying to move goods are a vast number of small companies whose very existence may be threatened by a disruption of goods during their prime selling season. And consider similar smaller companies that are not retailers but are just as dependent on a smooth-flowing supply chain.

Add to the list of those affected: the dray drivers who are paid by the load. After a one-day disruption at the Port of Oakland, truckers who could not pick up loads at the port lost $500 to $1,000 each, and a potential $100 per day for delivery delays that might result.

Even the labor unions asked the Occupy groups to allow workers to do their jobs. That should have been an easy request for the protesters to fulfill–even if they don't fully understand how supply chains operate and the fact that 99 percent of any port disruption's impact is most likely to be felt by the 99 percent they claim to represent.

Up to 2,000 union longshoremen were unable to do their jobs, according to port officials. And with annual earnings for longshoremen reaching $200,000, the impact adds up. Loss estimates for the one-day disruption at Oakland vary from $4 million to $8 million.

Protesters who did sufficient research to determine Goldman Sachs, a target of their efforts, owns a stake in SSA Marine apparently missed the fact it is only a three-percent stake. They should have spent some of that research effort examining the true economic impact of the supply chain disruptions they initiated. They would not have had to look far. The disruptions of auto parts supplies resulting from the March 2011 dual disasters in Japan were widely reported in the mainstream press.

Looking to recent history–the 2002 contract talks between terminal operators and the International Longshore and Warehouse Union–yields a quote from Stephen Cohen, a professor at the University of California-Berkeley. His 2002 comment sounds eerily contemporary to 2011: "A shutdown of West Coast ports could retard the nation's economic recovery and trigger an international financial crisis."

Protests can bring positive change if they aim at the right targets. They add to the chaos if they are misdirected.

On target: a campaign that went viral when Chase increased bank fees. The protest called for dissatisfied customers to move their accounts to credit unions and smaller banks. Chase got the message and rolled back some of the fees.

Off target: disrupting a supply chain to get the attention of the financial community and legislators. ■

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DIALOG

LETTERS TO THE EDITOR

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HOS Rule Rankles

The Federal Motor Carrier Safety Administration's (FMCSA) revised Hours-of-Service (HOS) rules, announced in late December 2011, are the wrong solution to improving safety on American highways.

The rules' restart provision, for example, seems to propose that it is safer for truckers to refrain from driving between 1 a.m. and 5 a.m. two nights a week. Should we ask physicians, emergency medical workers, firefighters, police officers, government agencies, manufacturing facilities, and others not to work during these times either, since it is deemed a risk?

FMCSA's revised rules create an economic burden for truckers, shippers, receivers, and consumers, and will do more harm to public safety and transportation infrastructure than good. They will add billions of dollars in costs to the entire economy at a time when we can least afford it.

They will also place more trucks on the road during daylight hours, creating risk for more – not fewer – accidents. With less efficient truck utilization and added costs, which will be passed to shippers, the price of goods delivered to market will skyrocket.

The bottom line: Why revise rules that are not securely monitored and equitably enforced? The real solution is to have driver activity logs electronically recorded and monitored. Keeping all carriers in compliance is the real solution for major highway safety improvements–not more regulation.

—**John R. Pope,**
chairman, Cargo Transporters

Editor's Note: The FMCSA's final Hours-of-Service ruling has elicited a variety of reactions across industry, from retailers to truckers to consumer safety advocates. See our Trends report on page 54.

The Certification Path

I read Perry Trunick's article *Are You Certifiable?* (*November 2011*). I am interested in becoming certified, but I am not sure who to contact to learn more about the certifications available. Can you point me in the right direction?

—**Joshua P. Collichio,**
account manager, Freightquote.com

Perry Trunick replies: Determine the field you are most interested in advancing in, then find the group that best serves your needs. Each supply chain and logistics professional association offers a different focus on certification based on its core values.

For example, the Association for Operation Management's Certified in Production and Inventory Management designation is geared toward purchasing and inventory management, and the International Warehouse and Logistics Association's Certified Logistics Professional curriculum centers on warehousing.

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tweeting it forward:

jack_lyon Jack Lyon
Wrong–It's the glue RT @ILMagazine: For all its name recognition, #SCM can be almost invisible within an organization: bit.ly/tbXJff

TruckerSamF Sam Flanagan
Expansion of canal will divert 30% of freight to East Coast RT@ILMagazine: L.A./Long Beach ports struggle to meet Panama Canal challenge

Zoneworks Zoneworks
The @ILMagazine Twitter feed is a great resource that I enjoy following.

HealthLogistics GH Supply Chain
@ RT @ILMagazine Thanks for acknowledging #supplychain as an invisible yet critical part of an org. Health supply chains can learn from it!

Fly-In For Trucking

Trucking drives the U.S. economy. In fact, nearly seven million Americans work in trucking-related jobs, including 3.5 million commercial drivers. More than 80 percent of all U.S. communities depend solely on trucks to deliver their essential everyday products.

Why, then, do lawmakers continue to consider burdensome laws and regulations that impede productivity in trucking? Restricting or limiting trucking productivity harms corporate supply chains, damages the economy, and results in fewer jobs.

For this reason, the National Shippers Strategic Transportation Council (NASSTRAC) and 11 other trade associations recently orchestrated an industry-wide fly-in, where shippers, carriers, legislators, and other key stakeholders in trucking came together to take a stand on key pro-trucking, pro-safety issues. The productivity of our trucking industry depends on it. For more information about this and other efforts, visit www.standupfortrucking.org

—**Brian Everett,** executive director, NASSTRAC

Department of Corrections

The carrier import volume chart published on page 27 in the December 2011 issue was incorrect. The TEU values should have been presented in millions. Here is the correct information.

Top Master Carriers for U.S. Imports

CARRIER	TEUs (millions)*
Maersk Line	1.475
MSC Mediterranean Shipping Co.	1.410
APL Co. PTE Ltd. NOL Group	1.035
Evergreen Line	1.006
Hanjin Shipping Company	.878
Hapag Lloyd	.858
Compagnie Maritime D'Affrètement	.690
Hyundai Merchant Marine	.647
Orient Overseas Container Line	.625
Yang Ming Marine Transport Corp.	.614

* Average import volume, Jan. 2011–Oct. 2011 Source: Zepol Corporation

10TIPS

STEP-BY-STEP SOLUTIONS

by Deborah Catalano Ruriani

Ensuring a Worry-Free ERP Implementation

The complaints most often associated with implementing an enterprise resource planning system (ERP) focus on flexibility, scalability, and upgrade and maintenance costs. To avoid snafus, do your homework before making a purchase. David F. Ross, senior manager, professional department, at APICS, The Association for Operations Management, offers this advice to guide your selection.

1 **Consider industry expertise.** The ERP vendor should have extensive industry experience and expertise to help you tackle complex business challenges and achieve rapid ROI.

2 **Confirm that the ERP vendor will serve your current and future needs.** Your ERP solution should allow you to continually adapt to new business, changing market environments, and technology strategies. Ask the ERP vendor for evidence of its ability to provide strategic, enterprise-wide, mission-critical applications to support your evolving business model.

3 **Prioritize value-added solutions.** Look for a robust application suite and critical functionality, coupled with a track record that reflects strong return on investment (ROI) and low total cost of ownership. The software should provide demonstrated and sustained business advantages.

4 **Look for a highly structured implementation methodology.** A proven implementation methodology removes uncertainty and facilitates a quick, effective, and worry-free startup. Above all, the methodology should provide for change management to guide personnel whose workflows may be altered.

5 **Seek out a flexible solution.** Because no two businesses are alike, it is crucial that you can tailor the ERP solution to fit your industry's needs. Customization does not mean expensive changes to software code and presentation. Rather, a flexible ERP application suite should offer robust, system-wide settings and utilities that allow you to define how each application supports your company's unique business policies and procedures.

6 **Investigate the solution provider's balance sheet.** Make sure the vendor is on sound financial footing and shows evidence of consistent growth. Also ensure the vendor adheres to sound corporate and fiscal management practices.

7 **Verify the technology architecture's strength.** The ERP vendor's technology must be able to grow with your business. Ensure that its technology tools support e-commerce, Web storefronts, XML-based EDI, interactive electronic communications, browser-based views, secure Internet access, automated workflow, portals, service-oriented architecture, and cloud-computing solutions.

8 **Make sure the provider is committed to enduring service.** Among the support tools vendors should supply are business and software consulting, education and training, a national help line, installation and upgrade assistance, and technical support.

9 **Select a solution that has a strong user community.** Nothing speaks to the probability of ERP implementation success like the experiences of other companies that have installed the system without problems.

10 **Ensure the vendor's integrity and dedication.** An established ERP vendor should be able to provide a list of successful implementations and customer testimonials verifying growth and increased profitability from the software. ■

READER PROFILE

as told to Merrill Douglas

John Hodge is director of supply chain at Prince Agri Products, a global manufacturer and marketer of trace minerals and specialty feed ingredients to the animal nutrition industry. Based in Quincy, Ill., Prince Agri, a division of Phibro Animal Health Corporation, serves manufacturers, large integrated producers, and distributors/blenders in the livestock, poultry, and pet food industries.

RESPONSIBILITIES:

Logistics, customer service, and materials management.

EXPERIENCE:

Logistics and warehousing, Frito Lay; logistics manager, North American Salt; director of logistics, Zemex Industrial Minerals; senior logistics group manager, Roquette America.

EDUCATION:

Michigan State University, B.A., advertising and marketing.

John Hodge: Feeding a Need

WHILE MAJORING IN ADVERTISING AND MARKETING IN college, I earned money by unloading trucks and stocking shelves in a warehouse. After graduation, I worked in advertising briefly. Then I heard the supply chain calling, and I returned to that field. I like the fact that in supply chain management you actually make things move–it's exciting.

Prince Agri Products hired me in 2010 to align its logistics, customer service, and materials management operations. My mission is to create organizational efficiencies, reduce costs, and optimize materials flow. Our supply chain organization is committed to providing best-in-class fulfillment, delivery, quality, and service to our customers.

In early 2011, my team faced the challenge of helping the company close a production plant and increase capacity at two other plants: state-of-the-art facilities in Quincy, Ill., and Omaha, Neb. This project required meticulous attention to detail in materials sourcing, logistics, and carrier base modification.

At these plants, we receive minerals that the company sources globally with rigid commitment to quality and food safety regulations. We resell or repackage some of those minerals, and blend others to produce our nutritional solutions.

We ship the finished ingredients through a network of warehouses throughout North America, and from there to customers around the world.

Another current project involves looking for ways to gain maximum value from our enterprise resource planning system.

We're also researching transportation management systems, and working to expand our distribution to

The Big Questions

What would be your dream trip, and with whom?
Surprising my wife with a trip to the U.S. Open.

Hidden talent?
I play lead guitar in a band almost every weekend and have recorded three CDs with various groups and artists. My music ranges from rock to blues to Americana.

Alter-ego dream job?
Radio DJ or barbeque joint proprietor.

Worst job you've ever had?
When I was in grade school, I had a *Detroit News* paper route. I delivered the papers on a bicycle, and it always seemed to be raining, snowing, or sleeting–but I never missed a delivery.

Guilty pleasures?
Fine dining and fine cigars.

reach farther and move product more cost-efficiently. One improvement that will help is a new rail spur at the Quincy plant.

Some of my team's top achievements were restructuring our truckload and less-than-truckload carrier base to improve costs. Another cost savings initiative involved maximizing truck weights on inter-plant moves.

We also established metrics for benchmarking performance and promoting continuous improvement. And we implemented a methodology for tracking innovative optimization projects and their impact on our bottom line.

In 2011, Prince Agri's supply chain organization led a cross-functional team called the Supplier Excellence Taskforce. The team reviewed two comprehensive, independent customer-perception surveys of our customer base and competing suppliers.

Based on what we learned, the team developed strategic focus areas and action plans to take advantage of Prince Agri's strengths. Our goal is to differentiate ourselves in the marketplace and increase customer satisfaction.

I learned one important lesson in my work from Peter Goodwin, president of Zemex Industrial Minerals, when I worked there as director of logistics. Peter taught me not to be afraid of leaving my comfort zone or relying on the support of others to succeed.

Peter was confident that I had the project management and analytical skills to lead the company's energy purchasing consolidation project. Ultimately, I was able to budget, forecast, and reduce costs while identifying plant efficiency opportunities.

I still check energy prices and futures on the Web every day. Energy will forever be a key component of logistics management. ■

LOGISTICS knowledgebase©

Aaron Baker, Sr. Director, Supply Chain Development, Damco USA Inc.
973-301-8434 • aaron.baker@damco.com

Global Supply Chain Strategy: Decision Points

As a former sea captain, I will never forget the first time I approached a junction buoy. This buoy is essentially a fork in the road, floating on the water, which marks where a waterway splits into two channels and indicates the preferred channel to transit. The options were: steer to the preferred channel and arrive at the destination in three hours; or steer to the non-preferred channel and arrive in two hours, but I would have to navigate past a number of potential hazards below the surface.

This example of a tactical decision, where a single person makes a choice based on a limited scope of variables, is fundamentally similar to strategic supply chain analysis. Except in strategic analysis, multiple groups of decision makers can have conflicting interests since there can be an impact across departments and business units.

It is well understood that holding safety stock at every node in a supply chain is a widespread approach to managing demand and lead time variability, but investors typically only reward maximized use of capital. In a similar notion, modeling software tools have lots of levers and knobs to adjust when optimizing aspects of a supply chain on cost, but determining the optimal enterprise solution also requires critical input from key stakeholders inside and outside a company to truly meet business objectives.

The below two global supply chain strategy examples illustrate the decision makers and decision variables needed to ensure the chosen solution is optimal for the business.

Sourcing:

A typical question raised is whether to source goods internationally or domestically. In most instances sourcing internationally from low-cost manufacturing countries appears to provide the lowest price. However, when variability from lead time of long, global supply chains becomes too volatile and appears to significantly affect service levels with potential stock outs, the domestic sourcing option looks less risky. Whereas, some may not want to hold inventory and prefer the flexibility of pushing the risk and ownership of moving goods internationally to the supplier.

From a key stakeholder perspective, influential decision maker's input can significantly impact the sourcing strategy. If a company is driven by mostly autonomous merchants of an organization, their objectives would likely be weighted heavier for making sure stock outs never happen. Conversely, if an organization is driven by enterprise financial performance the sourcing decision would tilt towards minimizing the amount of time working capital is locked up in the supply chain. Ultimately, the sourcing decision point can be distilled down to whether the unit cost is lower for the buyer or seller, but deciding on how to calculate the lead time and inventory costs will be determined by the nature of the company and have an impact on the total results.

Lastly, for a new product being sourced the following decision makers' participation should be considered for a broader point of view on costs: global sourcing, finance, IT, logistics procurement, legal, risk, brokerage and logistics service providers.

Distribution:

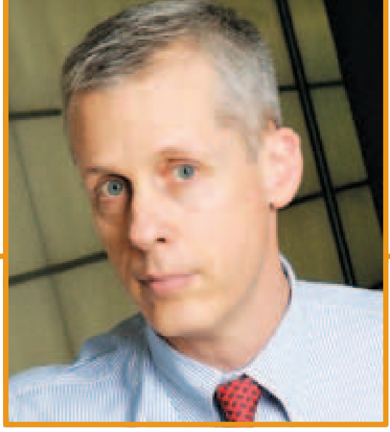
Challenging the basic global supply chain distribution network can be, well, a challenge. When companies focus on optimizing their networks for substantial cost and time savings, they are forced to widen their analysis outside of their own organization's network. The optimal result would increase control, visibility, on time delivery while decreasing costs.

The buyer and supplier need to agree to analyze and design a new distribution program with their logistics service provider, which would be an alternative to taking ownership of goods at origin as well as a vendor managed inventory (VMI) model. It would be conceptually similar to DC bypass and merge-in-transit programs, with the addition that the supplier also leverages the buyers' transportation rates and destination logistics services.

For a change of this magnitude, the buyer has to ensure its merchants are comfortable with altering their current processes. You need to demonstrate and prove flexible allocation will be possible and lead times will be reliable. This enables goods to be allocated and distributed while still in transit, instead of waiting for receipt of goods into physical inventory.

The result is that the buyer will not have to own the inventory until an order is made. At this time the ownership changes. This also eliminates the need for the supplier's destination distribution process and costs for physical cargo handling and increases speed to market and payment.

Getting back to the sea captain story, I eventually took the non-preferred channel after speaking to a few local fisherman who provided their input on how to navigate through this channel and helped me save time and fuel. Similarly in global supply chain strategy, the difference between calculated savings potential and realized, actual savings in global supply chain strategy is having the input of key groups of decision makers inside and outside a company. It will add significant value to the analysis of a global supply chain strategy that is both compelling and aligned with an enterprise's business objectives.



LOGISTICS knowledgebase©

Glenn Riggs, SVP, NA Logistics, Odyssey Logistics & Technology Corp.
203.448.3894 • glennriggs@odysseylogistics.com

Responsive and Flexible Logistics Management Solutions for 2012 and Beyond

For many companies, the biggest challenge is that the world is changing, and they are asking, "How should we respond to the rapid growth in Asia and other emerging markets and manage the longer supply chains? And, how do we react to volatile fuel pricing and unpredictable demand, security issues and changing regulations affecting the supply chain? How do we prepare for the merger and acquisition activity that's occurring?"

These are very real concerns, and companies require a logistics technology platform and an integrated set of services that can adapt to all of these changes and pressures.

From my experience, companies are seeking a partner that has the ability to be extremely flexible and fast in this rapidly evolving climate. They also are looking for increased stability at a time of great uncertainty. One very effective approach to managing in this environment is to supplement internal supply chain management staff with experienced logistics professionals who have visibility to data and global market information to help deal with these and other challenges, known and unknown. Companies need to work with a logistics partner who they can trust and collaborate with, to identify waste and opportunities, and provide multiple-mode choices on a global scale.

Process Standardization

In most organizations, work processes vary in different regions of the world. Many companies even have variability within individual regions. For example, within North America, one facility could be doing things one way and another company facility might be doing things entirely differently. Factor in global expansion, and it only compounds the issue.

In the international environment, it can be especially difficult to control the supply chain. There are often a lot of cargo hand-offs, as goods ultimately make their way to the end consumer market, that require dealing with a huge variety of work processes. A lead logistics provider with international scope has the ability to help standardize workflows across all regions and can improve the control and flow of materials by offering a global technology solution that allows visibility no matter how many steps and hand-offs there might be throughout the entire supply chain.

A lead logistics provider also can help struggling companies develop common best practices and work processes to map and integrate with the right technology, again allowing for much-needed visibility and control across the long international supply chains. The right solution can move a logistics team beyond execution and beyond meeting operational milestones.

On Scaling Up

Another challenge is increased security. Experienced lead logistics providers offer knowledge in the use of a variety of global resources, making it easier for the client to make cargo hand-offs across every country boundary in the world. As companies extend their global reach and seek growth in new markets, it's critical that the logistics provider have in-country experience and service offerings. Even crossing into Mexico can become a problem for U.S. domestic clients. One company recently shipping from the U.S. into Mexico was having difficulty scaling up. While they were comfortable with relatively small and few shipments – handling each one on a one-off basis – management really wanted to ramp up the business and send a lot of cargo into Mexico.

Since OL&T owns its own freight forwarding organization, as well as its own logistics design and contracting group, we put an end-to-end solution together that allows this company's cargo to easily move across the border and deliver much more efficiently. In cases like this, a global logistics solution means significant improvement in a company's cross-border trade. More importantly, with access to a global network of carriers and services, companies expanding geographically can quickly respond to changes in demand, and better manage their logistics spend.

The Changing World of Business and Logistics

No matter the geography or equipment needs, logistics managers should desire a lead logistics provider that partners with the right carriers to move their goods – ones that get the best from the marketplace with transparency. This especially includes providing visibility to the choice of carriers since it is critical that the provider does not force a solution based on the assets it owns.

While the world has and will continue to change, some things have not. You owe it to yourself to identify a trusted lead logistics provider that is focused on safety, cost optimization, service, and quality – with meeting your needs as the ultimate goal.

Odyssey Logistics & Technology provides the logistics professional with technology, processes and information for better decision making.

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Danny Slaton, Executive Vice President, Business & Product Development, SMC³
770-486-5850 • dslaton@smc3.com

The Role of Cloud-Based LTL Content in Smarter Supply Chains

Cloud computing is quickly coming into its own: Its virtual, service-oriented, location-independent architecture is used across a whole host of industries to provide on-demand content for accurate decision making. The U.S. freight industry is quickly catching on to the value of actionable content delivered via the cloud, which easily lends itself to supporting effective supply chain management (SCM) and optimization (SCO) strategies and initiatives.

On-demand content is especially critical in the less-than-truckload (LTL) industry. LTL transports roughly $30 billion of finished consumer products, food products and raw materials in the United States annually. In the heyday of excess LTL carrier capacity – before the recession forced LTL carrier consolidation and slashed carrier capacity – shippers and logistics service providers (LSPs) could "shop" for low LTL carrier rates and largely ignore the supply chain risks of price-only-based carrier selection.

Today's supply chain operates in a much different environment. Embedding an under-qualified carrier in your supply chain might easily mean missed delivery deadlines that cascade into stock or parts outages, unnecessary warehouse staffing, excessive warehousing and distribution space expenses, etc. – problems that still surface in even the best-run organizations.

Our discussions with shippers and LSPs convinced us that providing them with insight into LTL carriers' regional or interregional expertise, partnership capabilities, transit times, on-time delivery qualifications, and operational capabilities were a prerequisite for effective SCM and SCO. With that conviction in mind, we recently released CarrierConnect XL – delivered via our private cloud-based XL platform.

The XL platform is a technology-agnostic mechanism for delivering content, and CarrierConnect XL enables carriers to update their content in near-real time, including detailed, terminal-level contact information and operational capabilities like points-of-service, hours of operations and transit time variations based on service points and terminals. This carrier content gives shippers/LSPs deep insight into the dynamic world of carriers, where service and transit times change constantly, impacted by expanding or contracting terminal services areas, line haul and route reconfiguration, delivery schedule changes, new services, or even disruptions outside a carrier's control (like infrastructure breakdowns or regulatory constraints).

Perhaps more importantly, shippers and LSPs can now use CarrierConnect XL to calculate and re-calculate multiple "what-if" shipping lane and timeline scenarios and ensure accurate routing decisions that support strategic management of distribution networks and transportation, logistics and supply chain solutions. Through SMC³'s RateWare XL and CarrierConnect XL, rates and transit times are now routinely factored into shipper/LSP optimization runs and integrated into transportation management system (TMS) or enterprise resource planning (ERP) systems, including SAP TM 8.0.

CarrierConnect XL is just part of our larger XL strategy, which is developed to provide cloud-based computing benefits to carriers, shippers and LPSs. XL supports both Windows- and Java-based technologies and offers advantages – including ease of integration and access to RateWare XL web services, that can be created, added and deployed without impacting existing LSP customers' customers, for example. In addition, backward compatibility also ensures XL infrastructure is designed to support redundancy at all levels and is further supported with SAN architecture, supporting pricing for several hundred individual carriers as well as the LTL industry's benchmark pricing via CzarLite modules.

We fully realize that successful supply chains depend upon timely, actionable LTL service, transit time and pricing data from carriers. As always, our goal is to provide products that support content exchange between carriers, shippers and LSPs, so they can build efficient networks, support effective supply chains, and expand their ability to act with precision and intelligence.

SMC³ provides content, technology products and solutions, and educational benefits to more than 5,000 customers and members operating throughout continental North America. Shippers, carriers, logistics service providers (LSPs) and freight-payment companies rely on SMC³'s core expertise – transportation pricing – to support their successful transportation, freight planning and supply chain planning activities.

To learn more about how SMC³ CarrierConnect XL can help you secure your best LTL results, download our white paper: "CarrierConnect Dynamic LTL Carrier Service Information" at http://www.smc3.com/smc3/knowledge-whitepapers.jsp or call us at 800-845-8090.


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Eric Lail, Vice President, LEAN Performance Solutions,
Global Shingo Prize Examiner, Transportation Insight
828.485.5000 • elail@t-insight.com

Tough Economic Times Require LEAN Logistics Solutions

With economic pressures rising, companies must seek ways to evaluate their current state, and design a future state that surpasses their strategic goals and their customers' expectations. Manufacturers, retailers and distributors are constantly working to improve their performance in quality, cost, delivery and service. With those goals in mind, forward-thinking organizations are pursuing LEAN assessments to evaluate their supply chain, combined with innovative LEAN solutions to help them design the future state of their value stream. Companies are seeking deep data analysis, on-site operational reviews and customized supply chain solutions to help them save money, improve control and increase productivity in the future state of their logistics operations. It's this process of evaluation and innovation that ultimately enables companies to sustain competitive advantage and dominate their market.

A "value stream" is comprised of processes – value added and non-value added – required to bring a product or service to the customer. At Toyota, where this concept was developed, value stream maps depict the material and information flow paths to highlight opportunities for improvement. While many companies still operate in silos, a "value stream" approach implies that a company is working continuously on the "big picture" to include total costs, total quality systems and service from the eyes of the consumer. Conversely, organizations with silos have like-processes grouped in their manufacturing, distribution or administrative environments, resulting in longer lead-times and large amounts of stagnant inventory. By eliminating waste and improving processes, companies can quickly and drastically shrink lead-times. A windfall of positive change follows, such as increased cash flow, reduced costs, enhanced quality and reduction of necessary floor space.

Dr. Eliyahu Goldratt, author of *The Goal* and best known for his Theory of Constraints says, "The core problem with most companies is the administration of sophistication. When you have a complicated system, complicated solutions do not work!" Goldratt says the most complex systems require the simplest solutions. Many people think that LEAN is a set of tools like the Theory of Constraints. The more you learn and practice, however, the better you understand LEAN is a set of principles that uses certain tools within structured systems of processes to allow companies the ability to satisfy their customer's demand. With the right process, any company can be successful.

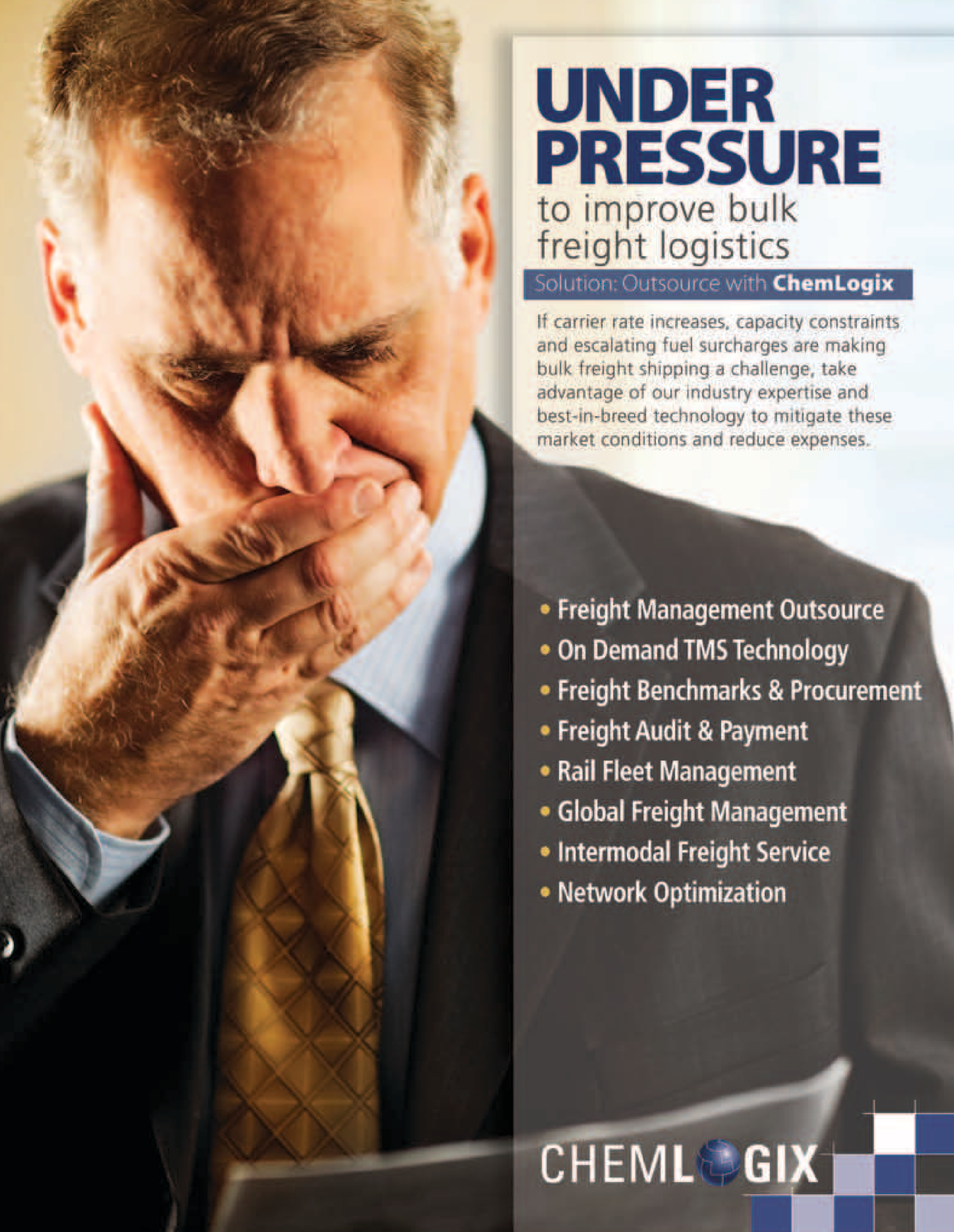
What is required to begin a LEAN journey across your supply chain? Upper management must be totally committed to the journey. It is not a "magic pill" for an organization. If it were, everyone would be successfully implementing LEAN practices. Top management must pioneer their teams into the unknown and lead by example. Jonas Salk who developed the polio vaccine once said, "Hope lies in dreams, in imagination and in the courage of those who dare to make dreams into reality." Are you personally attempting to learn and practice LEAN methodologies? What are you doing to drive out wastes within your own organization? These are two humbling questions for leadership teams to consider while feeling the increasing pressures of a volatile global economy.

By developing fully integrated LEAN solutions, companies can execute with excellence and begin to create their LEAN leadership capabilities from within. They change their internal culture and embrace continuous improvement across their supply chain and their organization.

Our LEAN Solutions Teams help companies reduce overall lead-times, inventories and changeovers. We have real-world experience in making that happen for our clients. In addition, logistics experts within our organization partner with clients in deploying LEAN principles to significantly improve carrier sourcing – both domestic and international – and warehousing, all the while increasing speed to market and customer value. Streamlined processes in related areas such as financial settlement, supply chain technology and business insight provide additional game-changing advantages. Value-added services such as the sourcing of indirect materials, packaging and MRO round out our strategic offerings.

At Transportation Insight, we leverage industry expertise and intellectual capital to create new, customized ways to help clients meet their business goals. Providing logistics engineering, financial analytics and cutting-edge technology, we create distinctive, end-to-end supply chain solutions in concert with our clients. It is this co-managed, continuous improvement approach that enables our clients to achieve sustained competitive advantage. Through evaluation, innovation and best-in-class supply chain solutions, we help our clients dominate their market!

Transportation Insight provides LEAN logistics solutions, and sister company Total Insight offers LEAN Consulting. Eric Lail is Total Insight's VP of LEAN Performance Solutions. Lail is one of the world's 250 Shingo Prize Examiners and a LEAN supply chain expert. If you would like more information, please contact us at 828.485.5000 or www.transportationinsight.com.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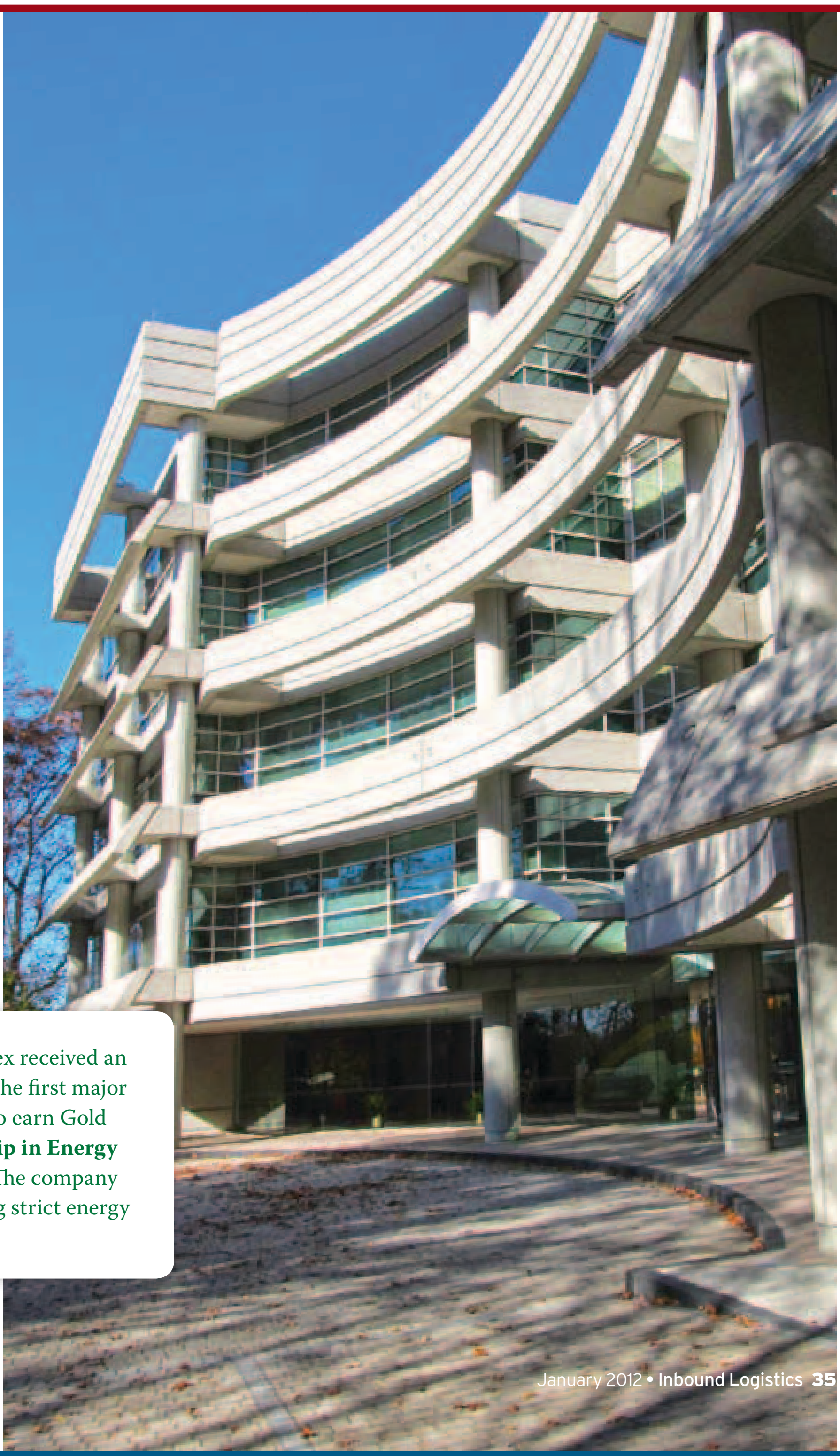
NOTED

THE SUPPLY CHAIN IN BRIEF



GREEN SEEDS

Arpin Renewable Energy formed a partnership with **Brown University's** entrepreneurship program to expand the transportation industry's use of solar energy. Three Brown students from this year's Entrepreneurship I class are working with class mentor Peter Arpin, president and CEO of Arpin Renewable Energy, to reduce Arpin Van Lines' operating costs and environmental impact by applying green technologies.

Maersk and the **U.S. Navy** are testing algae-based biofuel on the containership *Maersk Kalmar.* During its one-month-long, 6,500-nautical-mile voyage from Bremerhaven, Germany, to Pipavav, India, the ship will use 30 tons of biofuel. Engineers and crew onboard are analyzing nitrogen oxide, sulphur oxide, and carbon dioxide emissions data, and particulate matter from fuel use. They are also examing the effects on power efficiency, and engine wear and tear.

►**UPS'** corporate headquarters complex received an Energy Star certification, and became the first major package delivery and logistics facility to earn Gold Status certification from the **Leadership in Energy and Environmental Design (LEED).** The company received both certifications for meeting strict energy performance standards.

UP THE CHAIN

Gooi Soon Chai is the new senior vice president, order fulfillment and supply chain, for **Agilent Technologies Inc.** Chai leads a new, centralized organization created to help Agilent leverage its strength in manufacturing, procurement, and logistics across its three business groups: life sciences, chemical analysis, and electronic measurement.

Retail farm and ranch store chain **Tractor Supply Company** appointed **Alexander L. Stanton** senior vice president, supply chain. Stanton oversees the company's logistics, transportation, distribution centers, inventory management, and pricing operations.

ProBuild Holdings Inc., the nation's largest professional building materials supplier, named **Don Riley** executive vice president of supply chain and technology. Riley is responsible for integrating ProBuild's supply chain, information technology, and manufacturing organizations. He also oversees planning and implementing enterprise IT systems to support business operations.

Land O'Lakes Inc. named **Beth Ford** executive vice president, chief supply chain and operations officer. Most recently, Ford was executive vice president, head of supply chain, at International Flavors and Fragrances, where she was responsible for optimizing the company's global manufacturing infrastructure.

John W. Marsland was appointed senior vice president and general manager, Global Merchant Gases, at **Air Products,** a supplier of atmospheric, process, and specialty gases; performance materials; equipment; and services. Marsland formerly served as senior vice president and general manager, electronics, performance materials and supply chain, where he led the company's supply chain.

sound*byte*

"Our vision of a perfect customer experience is one in which our customer doesn't want to talk to us."

– Jeff Bezos, founder, president, CEO, and chairman of the board, Amazon.com

recognition

Global freight forwarder and logistics group **Kuehne + Nagel** received the **Emerging Global Partnership Award** from Hill-Rom Holdings Inc., a worldwide manufacturer and provider of medical technologies and related services for the healthcare industry. Through the use of consolidated and improved processes and control systems, K+N upgraded Hill-Rom's supply chain, resulting in cost savings and enhanced service quality.

Associated Global Systems (AGS) was awarded the **Expedited Carrier of the Year Award** by Best Buy's traffic council. The recognition is due, in part, to the 3PL's role in the Google TV launch, which required Friday-to-Saturday distribution of product in pallet quantities to all Best Buy stores nationwide. AGS was able to make confirmed deliveries on 99.8 percent of the shipments on Saturday as scheduled.

Inmar, which provides solutions that connect trading partners through consulting, software services, and operations, was the recipient of the **2011 North Carolina Technology Award** for Best Private Technology Company in the Excellence category. The awards honor companies and individuals representing the best in North Carolina technology and business in 21 categories.

For the second year in a row, **Hynes Industries,** a North American supplier and processor of steel and non-ferrous metals, was recognized as an outstanding supplier at **Wabash National Corporation's Annual Supplier Conference.** Hynes won the award for excellence in supply chain performance delivery, quality, cost, and innovation.

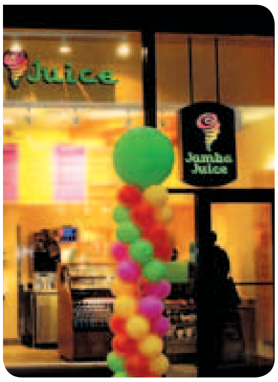
Southeastern Freight Lines was named **LTL Carrier of the Year** by home improvement retailer The Home Depot for the second year in a row.

[INFOCUS] **NOTED**

THE SUPPLY CHAIN IN BRIEF

SEALED DEALS

▼ **Jamba Inc.** and **SYGMA,** a national foodservice distribution company owned by **Sysco Corporation**, announced plans to expand their supply chain distribution alliance to include the Colorado and Texas markets.



Langham Logistics has agreed on a three-year contract with **Toyota Motor Sales Inc.** to manage a logistics operation in Los Angeles, Calif. This operation handles the fulfillment and distribution of Toyota's marketing materials, its trade show events, and the distribution of merchandise to dealerships throughout North America. To fulfill the contract, Langham has added 50 employees to its staff in California, and will operate a 90,000-square-foot warehouse in Compton. In addition to managing the fulfillment group, Langham will oversee administration, graphics, and print purchasing, as well as a small personal transport service at Toyota Motor Sales headquarters in Torrance, Calif.

BJ's Wholesale Club is now using **RedPrairie's** transportation management system to streamline operations and reduce costs. The TMS is a rapidly deployable solution that enables wholesale clubs and retailers to improve operational efficiencies by automating transportation tasks and optimizing shipment planning. BJ's will be able to better monitor carrier performance and shipment activities throughout its supply chain.

▲ **Batteries Plus,** a battery and light bulb franchise retailer, has switched on **HighJump Software's** warehouse management system at its new national distribution center in Glendale, Wis. Since going live, the company reports a 33-percent jolt in overall distribution volume capacity.

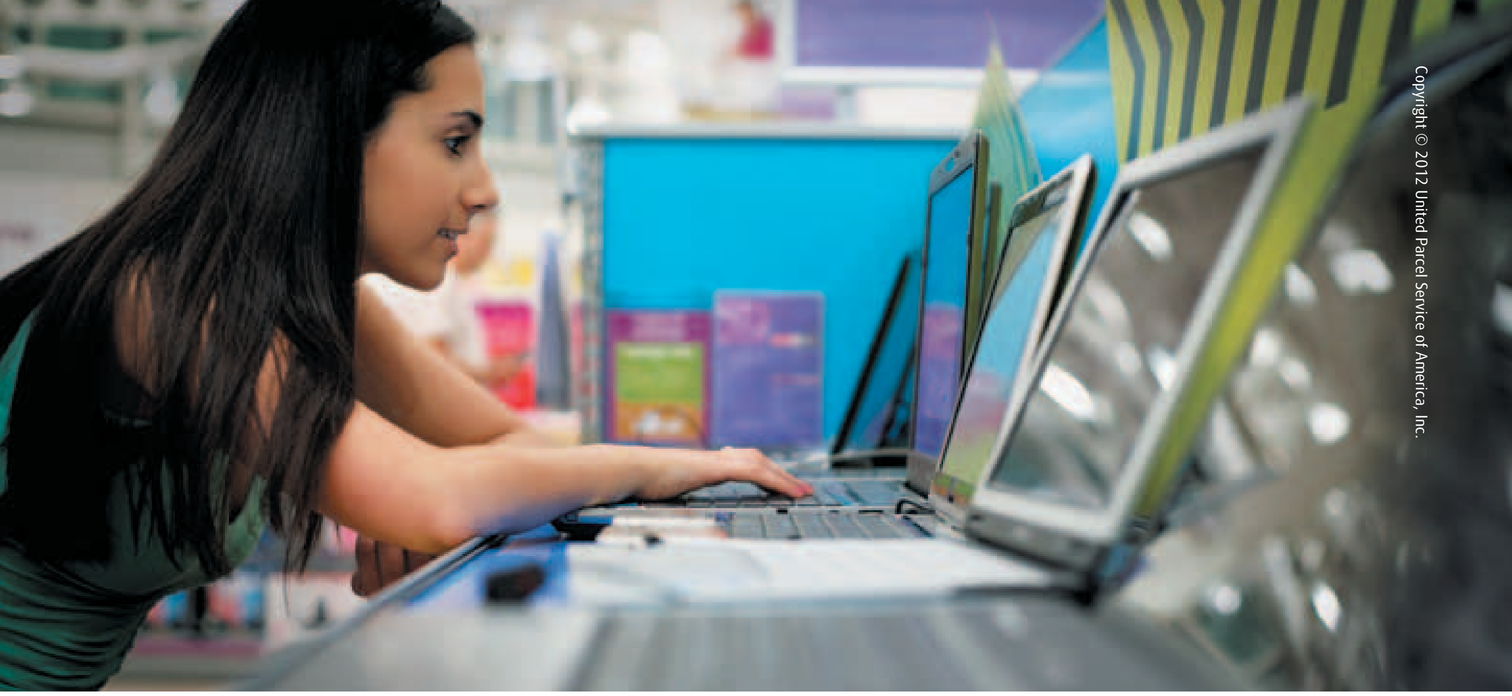
Damco's partnership with **Kingfisher,** Europe's leading Do-It-Yourself group, has been extended with the signing of a new contract through mid-2014. The contract covers international supply chain management for several of Kingfisher's businesses in Europe, which include the B&Q and Castorama brands.

Bobby D's, a nationwide supplier of fine Italian red sauces, has selected 3PL warehousing and transportation company **PSS Distribution Services** to provide distribution services throughout the Northeast region.

recognition

▶ The TempMark 8, **ShockWatch's** newest cold chain temperature monitor, won the **Coup de Coeur, Produit Phare (Show Favorite)** award for Material Handling, Storage and Logistics at the 2011 Europack Conference. The TempMark 8 monitor bridges the gap between low-cost go/no-go indicators and more expensive temperature recorders.

Baltimore-based vehicle routing, scheduling, and fleet management technology company **Roadnet Technologies** won **The Association for Corporate Growth-Maryland Chapter's 2011 Deal of the Year** competition, in the Technology category. The award recognizes local business transactions—including mergers and acquisitions, financings, alliances, and initial public offerings— that have impacted Maryland-area companies and individuals during the past year. Roadnet was selected based on its corporate sale from UPS to private equity firm Thoma Bravo in December 2010.



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

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

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

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

For more high-tech industry insights, go to **thenewlogistics.com/technology** or snap the QR code.

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recognition

◀ **CN** received **Toyota Canada's Carrier of the Year Award for 2011.** The automotive manufacturer presents the award annually to the railroad or truck carrier that exhibits the best performance in the key performance areas of transit time, quality, and customer service.

Air and ocean freight TMS portal solutions provider **Acuitive Solutions** and its client, retailer Jo-Ann Fabric and Craft Stores, with Century Distribution Systems, won the top honor in the **Best Collaborative Practice category** at the **World Trade Group's 2011 Supply Chain Distinction Awards** competition at the North America 2011 Supply Chain and Logistics global conference in Dallas. The competition recognizes best practices and outstanding achievements in global supply chain execution.

Eight **Crown Equipment Corporation** facilities received **Lift Truck Operator Awards** from the National Safety Council. The award recognizes excellence in operating lift truck fleets without recordable or lost-time injuries.

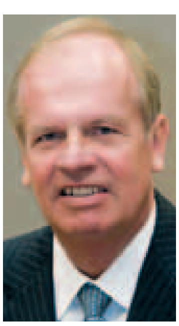
m&a

Transportation management company **Echo Global Logistics Inc.** acquired **Trailer Transport Systems (TTS),** an intermodal marketing company located in Rochester, N.Y. TTS expands Echo's rail capabilities by providing greater access to U.S. railroads and an extensive drayage network.

To support its ongoing global healthcare strategy, **UPS** purchased Italy-based **Pieffe Group** (Pieffe Depositi; Pieffe Nord). This acquisition will help UPS better serve its growing customer base in the pharma, biotech, and medical device industries.

Software solutions provider **Robocom Systems International** purchased **Wright Business Solutions,** based in Lake Geneva, Wis. Wright's publishing industry, third-party logistics, and SaaS solutions help expand Robocom's product offering.

IN MEMORIAM



Patrick E. Quinn, 1946-2011

Patrick E. Quinn, co-chairman and president of U.S. Xpress Enterprises, passed away on Dec. 13, 2011, of brain cancer. Entering the transportation industry as an attorney, Quinn enjoyed a 40-year career in trucking that was highlighted by numerous leadership roles, including a term as chairman of the American Trucking Associations.

Quinn co-founded U.S. Xpress in 1985 with business partner Max Fuller, who is the company's co-chairman and CEO. Under Quinn and Fuller's leadership, U.S. Xpress grew from a 48-truck start-up operation to become the nation's second-largest privately owned truckload carrier.

Donald J. Schneider, 1935-2012

Donald (Don) J. Schneider, chairman emeritus and former president and CEO of Schneider National, died Jan. 13, 2012, following a battle with Alzheimer's disease.

Schneider led the organization bearing his family's name for more than 25 years. During that time, Schneider National grew, survived, and thrived through some of the modern trucking industry's greatest challenges, including deregulation in the early 1980s.

Schneider retired from day-to-day responsibilities in 2002, and continued on as chairman of the board for the privately held firm until 2007.

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

TRENDS

SHAPING THE FUTURE OF LOGISTICS

Supply Chain Outlook: What's Ahead?

by Joseph O'Reilly

With the drop of the ball every New Year, it's only natural to take out the Magic 8 Ball and divine what supply chain trends loom large on the horizon. *Inbound Logistics* editors and writers thumbed through their notes, clicked through their digital Rolodexes, and checked with sources to ascertain what shippers should keep an eye on in 2012. All signs point to the supply chain once again playing an integral role within the private sector. Here are our predictions:

1 **Socially responsible supply chains extend beyond sustainability.** The balloons have burst and the green party has come down to earth, as economic stresses continue to focus attention on transportation and logistics measures that first and foremost reduce costs and waste–even if they do carry tangible sustainability benefits. Environmental concerns are still relevant, especially as they relate to reducing bottom-line costs, but many companies are now looking to address corporate social responsibility in its entirety–from raw material sourcing to greener best practices

to supply chain transparency. Businesses are also tackling issues such as conflict minerals and labor rights. Protecting and growing the brand means driving visibility and securing the supply chain at point of origin–and that goes beyond simply being green.

2 **SMB nearshoring follows lean.** Many small and medium-sized manufacturers that have pushed production offshore to find more competitive labor rates are now embracing lean principles to expand production bandwidth domestically, bring manufacturing home, and reduce total transportation and logistics costs. While lean best practices have value across any enterprise, the facility with which small companies can execute sweeping change makes return on investment faster and more effective.

3 **Panama Canal deadline dictates distribution.** The Panama Canal's 2014 expansion deadline is quickly approaching, and companies will continue to make important location and logistics decisions with New Panamax containerships in mind. Select East and Gulf Coast ports have already dredged their harbors and made necessary facility enhancements to support growth. Third-party logistics providers (3PLs) have similarly positioned assets to build out capacity. Now, shippers and consignees will be pressed to align U.S. distribution networks and offshore sourcing locations with an expected Panama surge.

4 **Intermodal goes mainstream.** When fuel prices soared in the summer of 2007 and hit a record high later that year, many companies began exploring ways to reduce transportation costs with their logistics service providers, including the use of intermodal. Those tentative incursions now allow shippers to more easily scale transportation mode to need and grow their intermodal footprint. As capacity and driver shortage concerns rally with the economy, over-the-road shippers that have diversified their transportation footprint will be in the driver's seat.

5 **Supply chain splintering continues.** Offshore networks will continue to fracture rather than consolidate as U.S. companies explore sourcing options beyond China, in hopes of finding cheaper labor costs, more redundancies to circumvent supply chain exceptions, and opportunities to sell into new consumer markets. Secondary and tertiary sourcing strategies have become commonplace given inherent global risks. Larger companies have similarly become more accustomed to operating regional supply chains as a means to reduce total landed logistics costs and respond faster to demand. Taken as a whole, these factors place additional pressures on companies to increase visibility among disparate suppliers.

6 **Risk management becomes expectation rather than exception.** Volatility in the Mideast, piracy, the Japan earthquake and tsunami, Thai floods, and Icelandic eruptions all contributed to a greater awareness of supply chain vulnerability. Much like security after Sept. 11, 2001, risk management and contingency planning are now standard operating procedures, and many companies are partnering with 3PL providers to allay risk and create additional flexibility.

7 **Supply chain social networking expands.** While consumers have been sucked into the virtual communication vacuum that social media sites such as Facebook, Twitter, and LinkedIn provide, the private sector has

Stores Target "Trade in and Trade up" Demand

Retailers will prioritize product lifecycle management and reverse logistics, if the latest prediction by industry analyst TrendWatching.com manifests itself. In an effort to capitalize on revolving-door demand for newer and better electronics, cell phones, tablets, and other media, some retailers are looking to compensate consumers who "trade in and trade up" with store credit and gift cards.

While "reCommerce" is by no means novel, the idea that mainstream big-box retailers may tap demand for refurbished first- and second-generation electronics is. The economy is having an impact in terms of how much consumers are willing to spend on high-end products. At the same time, the promise of capturing some trade-in value may spur other shoppers to upgrade.

For retailers, it's a win-win. They can artificially create demand in a depressed economy by offering more affordable products and trade-in incentives, while at the same time present themselves as environmental stewards by recycling after-life goods.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been leveraging it to enhance supply chain collaboration. At a base level, logistics technology has followed this course. The software-as-a-service (SaaS) network effect continues to help shippers tap a critical mass of information and more easily on-board new customers, suppliers, and supply chain partners, then communicate necessary information in real time. Companies are now entertaining the value of using social media and online user groups to network and communicate with internal departments, and among external partners, more intuitively and informally.

Airport Warehousing Demand Soars

If the current land grab around some of the United States' top airports is any indication of future prospects, the airfreight industry is poised for sustained growth, according to Jones Lang LaSalle's third annual *Port, Airport, and Global Infrastructure* (PAGI) report. A banner year for the air cargo industry, despite muddled economic fortunes, has spurred demand for warehousing space around U.S. airports. Cargo volumes throughout the country increased by 11 percent in 2010 to 28.2 million metric tons, just short of the 2007 peak of 30.4 million tons, according to the study.

This year's research by the global real estate services firm introduces an airport index to gauge the performance of industrial real estate markets around top cargo hubs.

Los Angeles International Airport tops Jones Lang LaSalle's list, thanks to strong cargo volumes, a low 3.8-percent industrial real estate vacancy rate, and several multi-million-dollar investment plans in the works.

New York's Kennedy Airport comes in second, with high demand for warehouse space in the metropolitan area driving vacancy rates to a low 3.4 percent. JFK is also one of the most space-constrained airports – with the highest rents.

While Chicago O'Hare Airport has a relatively high vacancy rate at 14.2 percent, it ranks third on the index because it serves as a hub for major airlines such as United and American, and has a vigorous modernization program in place. It also boasts one of the largest annual cargo volumes at 1.4 million tons, third behind Memphis (3.9 million tons) and Miami (1.8 million tons).

Miami also ranks high on the Jones Lang LaSalle list, with an average vacancy rate of 9.9 percent, reasonable rents at $5.83 per square foot, and high cargo volumes.

"Markets such as Los Angeles and New York have held strong with low vacancy rates owing to high demand and lack of new construction," says John Carver, head of the PAGI group at Jones Lang LaSalle. "Airport submarkets that saw a rise in new development before the recession, such as Dallas-Fort Worth and Miami, suffered higher vacancy rates during the recession and are taking longer to recover."

Leading Airport Real Estate Markets

AIRPORT	AIRPORT INDEX SCORE	VACANCY		AVERAGE ASKING RENTS		2010 TONNAGE	
		Current %	Rank	p.s.f. NNN*	Rank	Metric Tons	Rank
LAX	87.3	3.8	2	$10.89	3	1,747,629	5
JFK	82.0	3.4	1	$12.31	1	1,344,126	7
Chicago O'Hare	81.3	14.2	10	$5.31	5	1,376,552	6
Miami	69.8	9.9	8	$5.83	4	1,835,797	4
Anchorage	69.3	4.4	3	$11.15	2	2,646,695	2
Memphis	68.3	15.1	11	$1.96	12	3,916,811	1
Newark–Liberty	68.3	7.5	5	$4.93	7	855,594	9
Atlanta	64.8	15.2	12	$2.92	10	659,129	10
Dallas/Ft. Worth	64.5	12.1	9	$3.72	8	645,426	11
Louisville	60.8	9.7	6	$2.87	11	2,166,656	3
Indianapolis	58.0	9.7	6	$2.98	9	1,012,589	8
Oakland	56.5	6.7	4	$5.01	6	510,947	12

SOURCE: Jones Lang LaSalle, Airport Index, *Port, Airport and Global Infrastructure* report
*Per square foot, net net net

FAA Fights Pilot Fatigue

Airline pilots would fly shorter shifts and enjoy longer rest periods under new rules the Federal Aviation Administration (FAA) finalized recently in a landmark effort to reduce potentially dangerous fatigue. The FAA developed the most sweeping changes in pilot hours-of-service rules in 50 years after a Colgan Air crash near Buffalo in February 2009 killed 50 people.

The new rules, which will be enforced in two years, stipulate that:

- Flight-duty times range from nine to 14 hours. For the first time, rather than just counting flight time and rest time, flight-duty time would count the time spent flying to the job.
- Flight-time limits will be eight or nine hours, depending on the time of day and number of flights flown.
- Minimum rest periods will be 10 hours between shifts. The pilot must have an opportunity for eight hours of uninterrupted sleep during that rest period.
- Pilots must have 30 consecutive hours of rest each week, a 25-percent increase over current standards.

The FAA mandate has come under fire from labor unions – notably the Independent Pilots Association, which backs UPS pilots – because it does not include freight airlines. Cargo carriers are exempted from the rule because "the benefit didn't justify the cost," according to the FAA.

Because freighters generally fly at night, when restrictions are most constrained, the industry would have had to make greater concessions to accommodate cargo carriers. Airlines for America, an airline trade group, estimates it would cost $2 billion more each year if air cargo carriers were included in the rule. Given current trade economies, that would be a difficult tab for freighters to pick up.

UPS and FedEx pilot union groups oppose the FAA's pilot fatigue ruling because it exempts cargo carriers.

The States of Logistics

State governments are focusing attention on measures to finance infrastructure development, enhance freight movement, and create new avenues for business growth and expansion. Here is a roundup of recent news:

CALIFORNIA

One new law ushered in in January 2011 is California's Transparency in Supply Chains Act of 2010. The legislation, which covers all companies with worldwide sales of more than $100 million and sales of more than $500,000 in state, specifically targets supply chains for tangible goods.

Provisions include: verification of product supply chains to evaluate and address risks of human trafficking and slavery; supplier audits to evaluate compliance with company standards for trafficking and slavery in supply chains; internal accountability standards and procedures for employees or contractors failing to meet company standards regarding slavery and trafficking; and training for employees on human trafficking and slavery, particularly with respect to mitigating risks within product supply chains.

KENTUCKY

Lexington and Louisville have teamed with non-profit public policy organization the Brookings Institution to develop the Bluegrass Economic Advancement Movement, a joint regional business plan focused on supporting advanced manufacturing job growth and increasing Kentucky export activity. The effort will use Brookings' Metropolitan Business Plan framework to guide the initial research and the project's implementation phase.

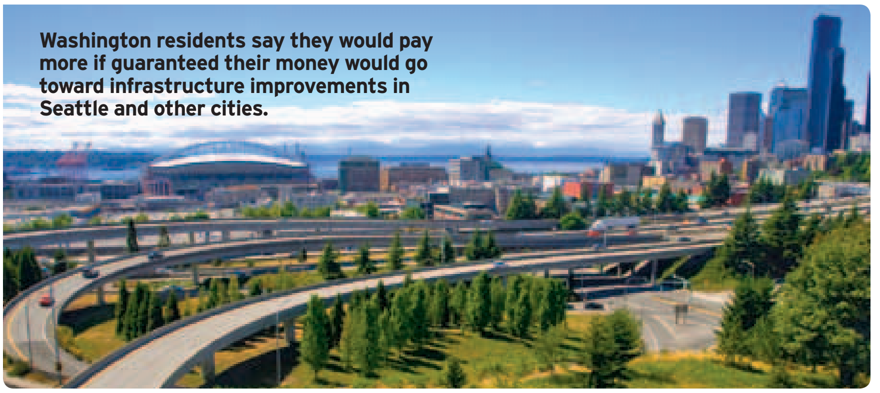
Although the plan's focus is advanced manufacturing, a variety of other economic sectors such as

energy, health care, defense contracting, and the equine industry will likely be impacted.

SOUTH DAKOTA/CALIFORNIA

The latest bad news for California is that companies in sunny San Diego are being recruited by South Dakota. South Dakota Governor Dennis Daugaard and Office of Economic Development Commissioner J. Pat Costello recently made an economic development trip to meet business leaders interested in learning more about South Dakota's business and regulatory climate. The state touts a stable regulatory environment, low taxes, and financial health as primary incentives.

It appears to be working. In 2010, nearly nine percent of South Dakota's business prospects came from California.



Washington residents say they would pay more if guaranteed their money would go toward infrastructure improvements in Seattle and other cities.

WASHINGTON

Most Washington residents don't think the state is in immediate need of money for transportation, yet they may agree to pay more if convinced the new dollars will actually fix roads, keep ferries afloat, and expand bus service, according to a statewide poll solicited by state lawmakers. The survey proposed nine options for raising revenue. Among the results: 61 percent of respondents support imposing a fee on vehicles with high emissions; 60 percent favor a licensing fee on electric vehicles; 52 percent endorse tolls; and 46 percent agree with hiking the gas tax.

Coke Adds Life

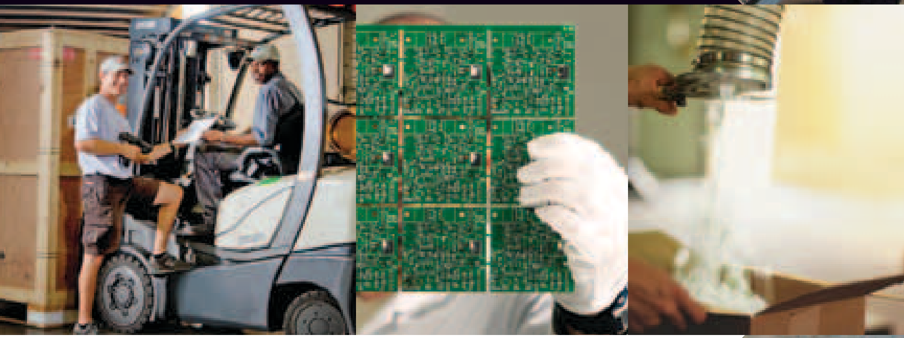
Atlanta-based Coca-Cola partnered with the World Wildlife Fund and turned its iconic red cans white during the 2011 holiday season to unveil a new marketing campaign in support of polar bear conservation–another Coke icon.

Behind the white aluminum cans is a commitment to green that has turned the cola manufacturer into a renewable plastic-packaging pioneer. The company recently launched multi-million-dollar partnership agreements with three biotechnology firms–Virent, Gevo, and Avantium–to expedite commercial development of next-generation PlantBottle packaging made from 100-percent plant-based materials. Coca-Cola's goal is to move its $60 billion-per-year global supply chain entirely to plant-based bottles by 2015.

In 2009, Coca-Cola launched its first-generation PlantBottle, the first recyclable PET beverage bottle made from plants (with 30 percent plant-based material). To date, more than 10 billion units have been distributed in 20 countries, and the company estimates that PlantBottle packaging has helped save the equivalent annual emissions of more than 100,000 metric tons of carbon dioxide.

Coca-Cola is also taking its mission to the masses. In 2011, it announced a partnership with H.J. Heinz Co. that allows the ketchup manufacturer to also use PlantBottle technology in its products.

Coca-Cola launched 1.4 billion special edition white cans onto the market to support polar bear conservation.



Turning Back the Clock: Time for Hours-of-Service Changes

After much debate and speculation, the Federal Motor Carrier Safety Administration (FMCSA) issued its final hours-of-service (HOS) rule, offering a compromise to some and a compromising mandate to most. While rejecting the much-maligned 10-hour daily work limit for commercial truck drivers–from the current 11-hour rule–the agency imposed a 70-hour cap on a driver's work week, down from 82 hours.

More pressing for shippers and carriers, the final rule requires drivers who maximize their weekly workload to take at least two nights rest between 1 a.m. and 5 a.m. That rest period is part of the rule's 34-hour restart, a provision that allows drivers to use the restart only once during the seven-day period. Barring a change in political proclivity or policy, enforcement of the new regulations will go into effect beginning July 1, 2013. The agency warns that blatant violations of the rule could result in fines of up to $11,000 per offense for trucking companies and $2,750 per offense for drivers.

Supporters of the HOS changes cite increased driver safety as the primary objective. At least one consumer lobby, Advocates for Highway and Auto Safety, has publicly lambasted the FMCSA for not going far enough.

The trucking industry has also panned the changes as unnecessary–citing a positive safety record since the last rule went into effect in 2004–and punitive, warning that increased driver constraints will only reduce efficiency and add costs throughout the supply chain. While the 10-hour veto is welcome news, it comes across as an inconsequential concession meant to allay criticism on both sides.

The greater concern among shippers is the "one to five" provision that forces truckers to rest during early morning hours, a preferred delivery time, especially in heavily congested and urban areas.

YOURS, MINE, AND HOURS OF SERVICE

While final implementation of the hours-of-service mandate is 18 months away, the issue continues to elicit strong opinions. Here's what some industry observers are saying:

"Though FMCSA preserved the 34-hour restart provision, these changes dramatically increase the disruptiveness of such rest periods by mandating that they take place between 1 a.m. and 5 a.m. The effect is that downtime due to restarts will increase significantly, and many drivers will start driving on Monday mornings, forcing thousands of trucks onto our roadways in rush hour and dramatically increasing traffic congestion."

*–**Jay Cutler,** counsel,*
National Shippers Strategic Transportation Council

"Supply chain optimization is the bread and butter of America's most successful retailers. Their ability to move goods efficiently has changed the retail landscape and benefited consumers by reducing prices and increasing product

assortments. The new Hours-of-Service rule will upend the advances in efficiency made over the past decade."

*–**Kelly Kolb,** vice president for government relations, Retail Industry Leaders Association*

"What is surprising and new to us is that for the first time in the agency's history, FMCSA has chosen to eschew a stream of positive safety data and cave in to a vocal anti-truck minority and issue a rule that will have no positive impact on safety. From the beginning of this process in October 2009, the agency set itself on a course to fix a rule that isn't broken, and by all objective accounts is working to improve highway safety."

*–**Bill Graves,** president and CEO, American Trucking Associations*

"This industry operates on a razor-thin margin. Any increase in operating costs will have to be passed on to customers in the form of higher prices."

*– **Glen Keysaw,** executive director of transportation and logistics, Associated Food Stores*

"Compliance with any regulation is already a challenge because everyone else in the supply chain is free to waste the driver's time loading or unloading with no accountability. The Hours-of-Service regulations should instead be more flexible to allow drivers to sleep when tired, and to work when rested, and not penalize them for doing so. It's the only way to reach significant gains in highway safety and reduce non-compliance."

*– **Todd Spencer,** executive vice president, Owner-Operator Independent Drivers Association*

"We're pleased that regulators have seen the wisdom of keeping the current 11-hour limit, but longer overnight breaks create the potential for more big trucks to be mixing with passenger cars during congested daylight hours. These new regulations will still drive up costs for businesses and consumers while making our highways and city streets more dangerous rather than safer. This is a case where something that might sound good on paper doesn't work in the real world."

*–**David French,** senior vice president for government relations, National Retail Federation*

"Unfortunately, by re-packaging and re-issuing an unsafe rule, the FMCSA has failed once again to protect the health and safety of working truck drivers and American families on our roads and highways."

*– **Jacqueline Gillan,** vice president, Advocates for Highway and Auto Safety*

2011 HOS Final Rule Provisions

(Changes Compared to Current Rule)

Compliance Date: February 27, 2012

PROVISION: On-duty time

CURRENT RULE: Includes any time in commercial motor vehicle (CMV) except sleeper-berth.

FINAL RULE: Does not include any time resting in a parked CMV. In a moving property-carrying CMV, does not include up to two hours in passenger seat immediately before or after eight consecutive hours in sleeper-berth. Also applies to passenger-carrying drivers.

PROVISION: Penalties

CURRENT RULE: "Egregious" hours-of-service violations not specifically defined.

FINAL RULE: Driving (or allowing a driver to drive) three or more hours beyond the driving-time limit may be considered an egregious violation and subject to the maximum civil penalties.

PROVISION: Oilfield exemption

CURRENT RULE: "Waiting time" for certain drivers at oilfields (which is off-duty but does extend the 14-hour duty period) must be recorded and available to FMCSA, but no method or details are specified for the recordkeeping.

FINAL RULE: "Waiting time" for certain drivers at oilfields must be shown on logbook or electronic equivalent as off-duty and identified by annotations in "remarks" or a separate line added to "grid."

Compliance Date: July 1, 2013

PROVISION: Limitations on minimum "34-hour restarts"

CURRENT RULE: None

FINAL RULE: Must include two periods between 1 a.m. and 5 a.m. home terminal time. May only be used once per week.

PROVISION: Rest breaks

CURRENT RULE: None except as limited by other rule provisions.

FINAL RULE: May drive only if eight hours or fewer have passed since end of driver's last off-duty period of at least 30 minutes. [HM 397.5 mandatory "in attendance" time may be included in break if no other duties performed.]


ACL

GLOBAL

THE WORLD AT A GLANCE

by Joseph O'Reilly

Containers Aweigh

The International Association of Ports and Harbors (IAPH) has joined the World Shipping Council, the International Chamber of Shipping (ICS), and the Baltic and International Maritime Council to encourage the International Maritime Organization (IMO) to amend the Safety of Life at Sea Convention (SOLAS). The measure would ensure that a ship and port facility have a container's verified actual weight as a condition for carriage.

The announcement comes as the IMO's Dangerous Goods, Solid Cargoes, and Containers subcommittee, which is responsible for container stowage and ship operations safety, continues its efforts to construct a SOLAS requirement that loaded export containers have a verified weight prior to vessel loading.

"Weighing containers to confirm their actual weight is the right operational and safety practice," says Dr. Geraldine Knatz, president of Tokyo-based IAPH and executive director of the Port of Los Angeles. "There is substantial experience with such a requirement in the United States, demonstrating that this is feasible on a technological and commercial basis.

"It is time to make this a global safety practice, and our association will assist its members in cooperating with terminal operators to develop a suitable and effective process," she adds.

All four organizations note that governments around the world continue to focus on obtaining more complete knowledge of products actually in cargo containers arriving in their countries, and that Customs authorities would welcome having accurate cargo weights as they screen import freight.

China's 3PL Overtures

China, as well as foreign businesses operating in-country, has always relied on third-party logistics providers to coordinate and facilitate transportation and logistics activities. But as exports continue to wane and domestic consumption grows, the country is looking to establish its own domestic 3PL market.

The government made a similar overture in 2010 when it decided to consolidate airfreight operations between Cathay Pacific and Air China. The move was predicated by the fact that foreign carriers move approximately 70 percent of international freight. China wanted to capture a bigger piece of the transportation business. Now that sentiment is percolating in the integrated 3PL space.

"In 10 years or fewer, the increased financial strength of some large Chinese logistics firms will help them go global and some may challenge the big logistics multinationals such as DHL, UPS, and FedEx in global markets," says Jeffrey Wong, partner, KPMG China.

What's driving this change? The financial advisory firm points to China's fast-growing e-commerce sector as one example. Between 2008 and 2010 that market quadrupled,

Brazil's Great Train Robbery

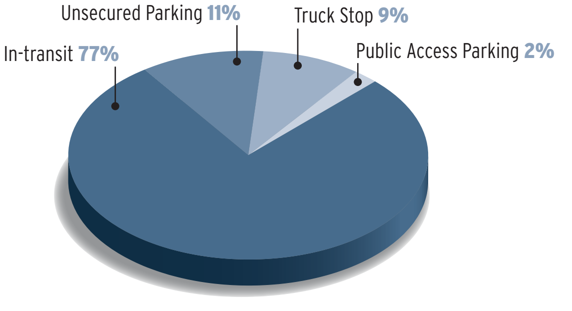
Reminiscent of a scene out of *Butch Cassidy and the Sundance Kid*, police in Brazil's southeastern Sao Paulo state are investigating the theft of 55 tons of corn from a moving train.

Thieves greased the tracks, making the wheels of the 54-wagon locomotive skid and slow down. They then used a tow truck with a hook to remove the corn-filled containers, authorities say. The theft occurred as the train traveled through a rural area about 180 miles north of the capital Brasilia, on its way to the southeastern port of Santos with 66 tons of corn and sugar.

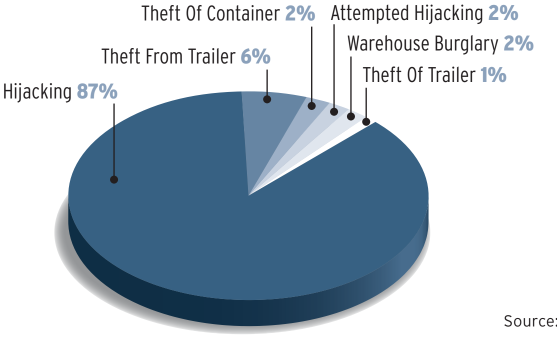
While this train robbery is extraordinary, cargo theft in Brazil is common, costing businesses millions of dollars in losses annually. The lack of serious legal penalties is added incentive for thieves to target freight, according to FreightWatch's third-quarter 2011 *Latin America Cargo Theft Report*.

Currently, 80 percent of cargo theft is concentrated in southeastern Brazil, the country's most affluent and freight-heavy region. The majority of incidents, however, are truck hijackings, with 77 percent occurring while vehicles are in transit (*see chart below*), according to the Austin, Texas, cargo security watchdog. The latest freight train theft is an anomaly, and marks a new and more brazen piracy trend in the shipping industry.

BY LOCATION: In the third quarter of 2011, 87 percent of all thefts in Brazil were hijackings, and 77 percent occurred while trucks were in transit.



BY TYPE OF EVENT: Most hijackings in Brazil involve the kidnapping of the driver. In Q3-11, the driver was kidnapped in 90 percent of all hijackings.



Source: FreightWatch


Con-way
Con-way
Menlo
Con-way
Menlo
WORLDWIDE LOGISTICS

a sure indication that domestic consumption is swelling. In fact, China's equivalent to Amazon.com, the Alibaba Group, is planning to set up its own logistics company.

The lowest-hanging fruit for Chinese logistics service providers will be domestic express deliveries, which have recently outgrown the international business. Local knowledge is still a challenge for foreign companies and 3PLs trying to make inroads, and presents an obvious advantage for homegrown expertise.

Eur-Asian Fracture

Lingering uncertainty over the Eurozone's economic prospects and currency is having a noticeable impact in Asia, given the fact that Europe remains the world's top export destination and is responsible for one-quarter of all Asian exports.

The splintering of global supply chains in terms of regionalization and country-specific specialization only exacerbates concerns among Asian countries. Even the slightest drop in demand from Europe has a percussive effect as it radiates out to all parts of the supply chain–the more complex the product and the broader the sourcing footprint, the greater the damage. Governments fear Europe's bullwhip effect will ensure a tailspin throughout Asia.

China, to a degree, has helped stem demand deterioration in some export markets by stimulating domestic consumption. Other countries are much more vulnerable.

India: Open for Business

A recent move by India's government to allow more foreign direct investment (FDI) into the country's large and growing food and beverage, and retail industries will likely effect swift change as global multinationals look to make inroads into the world's second-largest consuming population and $540-billion retail market.

India approved a 51-percent FDI allocation for multi-brand retail, such as supermarkets, and increased the cap in single-brand retail to 100 percent despite resistance from both allies and opposition parties that have taken a protectionist stance. The country currently allows 51 percent FDI in single-brand retailers and 100 percent for wholesale operations. Top global retailers such as Walmart, Carrefour, Tesco, and Ikea have long lobbied for a more liberal policy.

Proponents argue that an influx of supply chain-savvy retailers will have a positive impact on both infrastructure investment and the introduction of best practices. India is notorious for its underperforming food chain, where costs run exorbitantly high, 30 percent of produce is wasted, and poverty remains a conspicuous blight.

The country's poor road infrastructure and anachronistic transportation assets make timely perishable deliveries a challenge. Moreover, India has limited cold storage capacity. As a consequence, the government believes the allure of 1.2 billion people will be incentive enough for a large multinational such as Walmart to enter the market and make necessary investments.

The government has also proposed rules aimed at protecting local businesses. Foreign retailers will have to source approximately one-third of their produce from small industries, invest a minimum of $100 million, and spend half of that on "back-end" supply chain infrastructure.

French retail giant Carrefour says it welcomes the Indian government's decision to open the country's multi-brand retail market to foreign investment.

Singapore recently reported that its economy will likely suffer a sharp slowdown next year as export orders from developed countries dry up. The country is heavily reliant on trade, especially as a redistribution hub for finished products moving out of the region.

Elsewhere, Japan suffered its first drop in exports in three months during October 2011, threatening the country's recovery from the earthquake and tsunami. A stronger yen, which shrinks the value of overseas earnings, is forcing domestic manufacturers to shift production overseas.

Netherlands Tests Truck of the Future

Dutch trucking company Rutges Cargo has joined with the Netherlands' Ministry of Infrastructure and the Environment and independent applied research company TNO (Netherlands Organization for Applied Scientific Research) to pilot the "Truck of the Future" program. The objective is to differentiate ideas, products, and solutions that create fuel economy, with specific focus on systems that lower wind resistance, stimulate fuel management, and support better driving behavior.

Working with trucking partners such as Rutges, TNO has equipped hundreds of trucks with various systems to measure and evaluate which ones have the greatest impact on reducing fuel consumption and carbon emissions–in effect, separating best-of-breed technologies and innovations from the herd.

"We consider the sustainable and accountable transport of goods to be an important responsibility," says Martin Gussinklo, managing director, Rutges Cargo. "Our participation in the program endorses this principle and will explore how an aerodynamic side fence fitted to our trailer, for example, decreases air resistance."

For its part, Rutges Cargo has also invested in technology to achieve lower aerodynamic resistance by using "spray down" mudguards, and lower rolling resistance through a system that monitors tire pressure.

When the test program is complete, TNO will share its research findings with the Dutch transportation industry. By giving shippers and carriers better clarity to unique performance characteristics, it hopes to encourage industry to invest in proven solutions that create a more sustainable and economical transport chain.

Ocean Carrier Currents Converge

Amid rumblings of consolidation within the ocean freight industry—notably the possibility of a merger between Japanese steamship lines MOL, "K" Line, and NYK—carriers are consolidating services in certain lanes.

Hamburg Süd and Maersk Line, and CMA-CGM, CSAV, and CSCL, respectively, have reached an agreement to combine services between Asia, South Africa, and the east coast of South America. The move comes as part of continued efforts within the shipping industry to balance supply and demand during the upcoming 2012 slow season.

Depressed freight rates and rising fuel prices drove MISC to sail away from the container shipping business.

The latest news is by no means a revelation in an industry where seasonal partnerships are commonplace. Still, coming off a 2011 peak shipping season that never materialized, further signs indicate that the industry has outgrown demand.

One such sign: Malaysian carrier MISC announced that it will pull out of the container shipping business by the middle of 2012, citing losses of close to $800 million over the past three years. The container shipping industry is plagued by overcapacity and operators are struggling with depressed freight rates and soaring bunker fuel prices, the carrier told investors.

Ironically, MISC will focus attention on the fuel trade—specifically its core tanker business—which has far better margins than container shipping.

China Growth Shifts High-tech Sourcing Balance

China's explosive manufacturing growth, middle class expansion, and rising inflation are shifting the global sourcing equilibrium for many high-tech companies in Asia, according to *Change in the Supply Chain*, a recent report

authored by IDC Manufacturing Insights on behalf of UPS.

As China becomes more prohibitive from a total landed cost perspective, companies are exploring less-expensive options elsewhere in the region, as well as closer to the United States, where they can respond more quickly to demand. Nineteen percent of high-tech company respondents plan to source components and raw materials from North America in the next three to five years, the survey reveals.

Shifts in sourcing strategies will likely be most pronounced within the Asia Pacific region. Supply chain diversification as a measure of economy, risk aversion, and contingency planning–especially in light of the Japan earthquake and tsunami, and Thailand floods–continues to shape how high-tech companies manage their global operations. Although China and Japan will continue to supply most companies, sourcing will move to both emerging and existing Asia Pacific countries in the next three to five years, according to survey findings.

Forty-two percent of respondents currently source components and raw materials from mature APAC countries, including Thailand, Malaysia, and Singapore. This figure jumps to 55 percent when looking ahead to the next three to five years. Similarly, 16 percent of companies now source from emerging countries such as the Philippines and Vietnam, while 24 percent plan to source components from these countries in the future.

As a consequence of these rapidly changing sourcing dynamics, half of all high-tech trade lanes are expected to involve intra-Asia movements in five years.

U.S., Canada Ease Cross-border Barriers

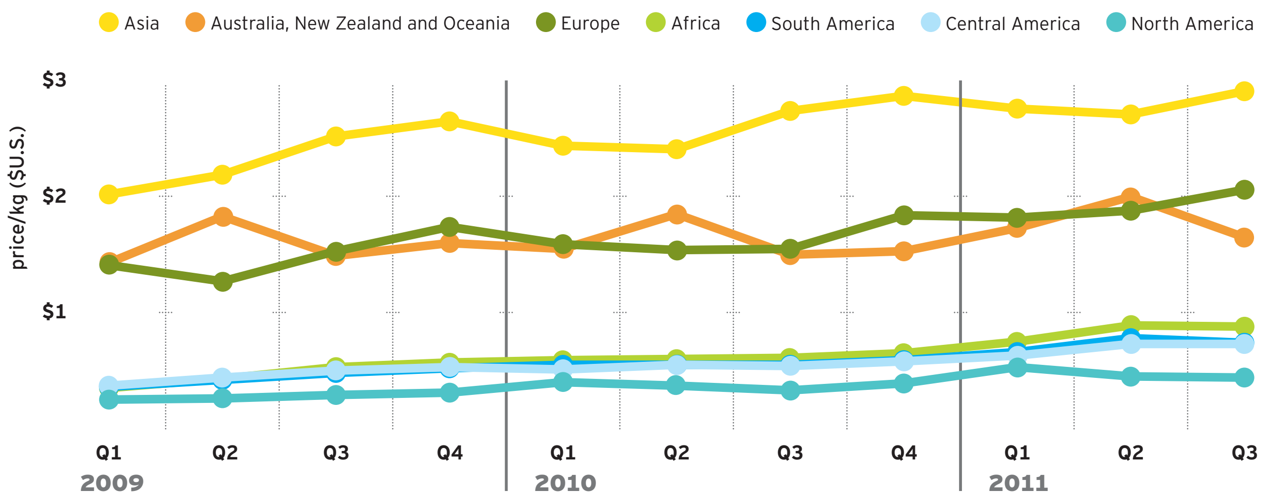
U.S. and Canadian importers and exporters have reason to be optimistic with the announcement of two action plans designed to accelerate trade across their shared border. President Obama and Canadian Prime Minister Stephen Harper have jointly released the Action Plan on Perimeter Security and Economic Competitiveness–parts of which are expected to begin in early 2012.

Following the U.S.-Mexico cross-border resolution earlier in 2011, the other end of the NAFTA pipeline is getting a procedural uplift. Along with Customs advancements, the action plans promise to ease travel, improve security in North America, and align regulatory approaches between the two countries.

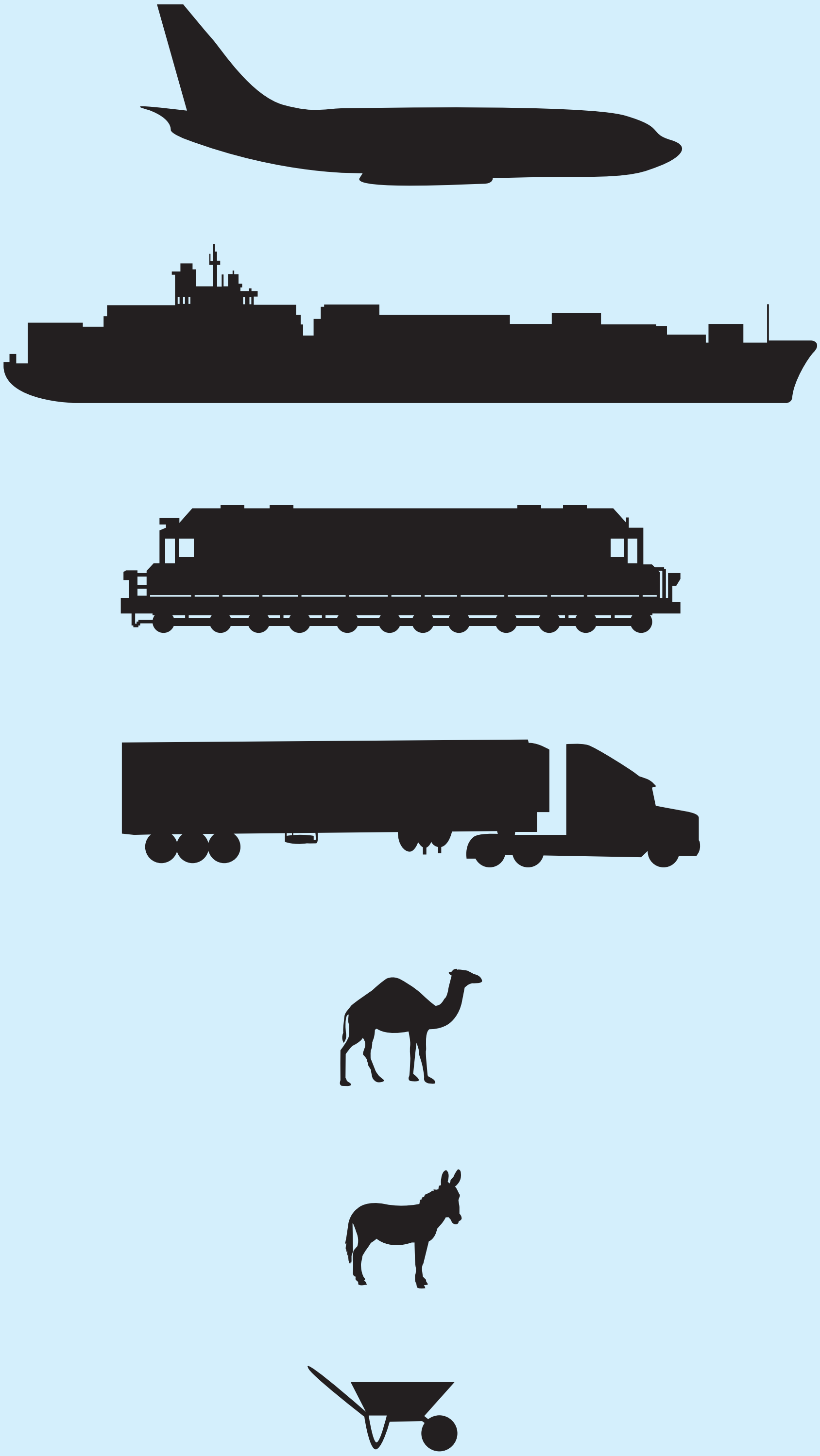
A central piece of both plans involves the Customs-Trade Partnership Against Terrorism (C-TPAT) program, which

U.S. Vessel Import Value

The price per kilogram of U.S. vessel imports is largest for Asia due to high-valued goods such as vehicles and machinery coming from that continent. Conversely, large quantities of low-valued products such as fresh produce and natural resources come from Central and South America.



Source: Zepol Corporation, www.zepol.com



includes more than 10,000 U.S. companies.

"The C-TPAT program will be unified with its Canadian counterpart," says Marianne Rowden, president and CEO of the American Association of Exporters and Importers, a Washington, D.C., trade organization. "It's another step in an ongoing effort to harmonize trade security rules around the world. That's good for reducing costs and creating U.S. jobs necessary to stabilize the global economy."

Global Supply Chains Confront Negative Exposure

Supply chain transparency is the bane of most global organizations–if not for the challenge and cost of connecting disparate business units and partners and synchronizing real-time information exchange, then for the increased exposure to scrutiny by ethics overseers and media alike.

Apple has been a popular target, a consequence of its squeaky clean, sparkling white product and marketing persona. The company has come under attack from various labor rights and green lobbies over the past few years regarding questionable offshore practices. Most recently, protestors have amplified criticism of Apple and other electronics manufacturers for sourcing conflict minerals from African mines where human rights abuses are rampant.

The manufacturer, famously hermetic when it comes to product development news, has become noticeably more open to sharing information about suppliers.

Food and consumer products companies that operate long and complex supply chains face similar exposure. Swiss food and nutrition company Nestlé, for example, has been plagued by claims that children are working on African cocoa farms supplying its factories.

In partnership with the Fair Labor Association (FLA), a Washington, D.C., non-profit that works with major companies to improve working conditions in their supply chains, Nestlé will send independent experts to the Ivory Coast next year to examine its cocoa supply chain. Where they find evidence of child labor, the FLA will identify root causes and counsel the manufacturer and government on how to address and resolve the situation.

Criticism over chocolate production led Nestlé to partner with the Fair Labor Association, assess its cocoa supply chain, and commit to promoting better working practices.

Nestlé, which is seeking to become the first food industry member of the fair trade lobby, will publicize its assessment in 2012 and use that information to guide future operations.

The work with the FLA complements Nestlé's internal efforts to promote sustainability and better working practices in its cocoa supply chain, which it set out in the Nestlé Cocoa Plan. The road map is a 10-year, $118-million commitment to provide higher-quality cocoa plantlets to farmers and to make the cocoa supply chain more transparent.

Africa Targets Transportation Integration

While much of the world is beset by economic distress, Africa is making a play to coordinate transportation development and stimulate economic development.

The Second Session of the African Union Conference of Ministers of Transport (CAMTII), recently held in Luanda, Angola, brought together ministers from various countries and economic development arms to assess transportation in three areas: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TRUCK
FLEXIBILITY
COMMUNICATION
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SYSTEMS
INTERMODAL
DOOR-TO-DOOR
TRANSPORT
EXPORT
DELIVERY
AIR CARGO
TEMPERATURE CONTROLLED
SUPPLY CHAIN MANAGEMENT
WAREHOUSE SERVICES

- Air transport (African Civil Aviation Policy, aviation safety and security and environment protection)
- Maritime transport (African Maritime Transport Charter, port management and development)
- Land transport (development of transport corridors, facilitation of transit transport, and improvement of road safety)

"We are all aware of the overall state of transport infrastructure and services in Africa," says Dr. Elham M.A. Ibrahim, commissioner of infrastructure and energy at the African Union Commission. "In most of our countries, transport has become a constraint rather than a facilitator of economic development.

"The biggest challenge for the continent to be competitive and combat poverty more effectively is to reduce transport costs to the world average," he adds.

Africa has long sought to catch up with the rest of the world and capitalize on an abundance of natural resources, manufacturing labor, and advantageous location along the Suez trade. Now that South Africa has been added to BRICS (joining Brazil, Russia, India, and China) as the primary trading bloc among emerging economies, the continent aims to expand further.

Africa has also received some welcome stimulus from one of its BRICS peers. In 2009, China superseded the United States as Africa's top trading partner, triggering as much as $127 billion in spend in 2010, up 40 percent from the year before. China has its sights set on energy and agriculture resources to fuel and feed its own economic engine, but has helped fast-track the development of refineries, ports, roads, bridges, airports, and railroads throughout the continent.

The objective for Africa now, as outlined by CAMTII, is to strive for greater economic integration among member states, with specific focus on transportation resources. [ ]

A Toast to Job Creation

England is tipping its economic development hat to tipplers, according to a new report that highlights the vital role the beer supply chain plays within the country's rural economy.

Around 32,000 rural jobs in the East of England depend on brewing and pubs, with more than $755 million expended in rural wages. Farmers in the region grow enough malting barley to produce 3.3 billion pints of beer a year, according to the *Grain to Glass* report.

The study, launched jointly by the National Farmers Union (NFU) and the British Beer & Pub Association (BBPA), underscores the economic importance of beer and calls for the government to do more to help the industry grow, adding that thousands of jobs could be created if appropriate policies are put in place.

The report also addresses the challenges the sector faces from high taxes, heavy regulation, and falling beer consumption. Growers have been striving to improve the quality of barley and hops, but the government can do more to help the industry grow. The NFU and BBPA are calling for a number of policy changes, including a review of the beer duty and more investment in crop research and development.

They also argue for less and better regulation, both on and off the farm and in transport, counseling planners and local authorities to recognize the importance of the pub as the hub of rural communities.

"It's a marriage of skills between farmers, maltsters, brewers, and publicans that produces the perfect pint from the perfect ingredients," says Andrew Watts, a barley grower and NFU regional combinable crops chairman.

"It's time to raise a glass to this British success story and ensure we have the right policies in place to help this supply chain thrive in the future," he adds.

The beer supply chain is good for what ails Britain's economy, creating 32,000 jobs in the East of England.


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Jeff Vielhaber is vice president, operations, at TTS,
214-778-0803 • *jeff.vielhaber@tts-us.com*

3PLLINE

by Jeff Vielhaber

Protecting Your Company Against Load Board Scams

Online load board scams have plagued the trucking industry for the past few years. Unfortunately, the lethargic economy means the problem will get worse before it gets better. Con artists are taking advantage of the fact that law enforcement has not made this issue a priority. Most scammers, in fact, are never prosecuted.

On average, load board scam victims stand to lose thousands of dollars. If companies take the time to research their transportation providers, they will better protect themselves against being scammed.

DO YOUR HOMEWORK

Because of the cost involved, shippers and brokers often fail to complete background checks on the transportation providers they find on load boards. A company that does not pay for a yearly subscription to a credit agency can be charged up to $50 per inquiry.

When weighing the cost of completing due diligence against the cost of being scammed, however, you will always come out ahead by running a simple credit check. Also confirm the carrier's address and phone number, safety record, and insurance policy.

Verifying active operating authority—which permits carriers to haul commodities for other businesses—is the simplest way to determine a carrier's legitimacy because many scammers don't bother to obtain it. If a company's authority has been active for more than one year, it is probably legitimate.

THE ELECTRONIC TOOLBOX

Shippers and brokers can use several online resources to help verify carrier legitimacy. Joining online monitoring services and the Transportation Intermediaries Association gives companies insight into their business partners and provides access to carrier watchdog services that report poor performance.

It is important to remember, however, that not all online sources are reliable. Shippers should follow up on all online research by directly contacting the company's office and its insurance representative to ensure the information is accurate.

In June 2011, the Fighting Fraud in Transportation Act of 2011 was introduced. This bill outlines several policies to make transportation regulation more effective, including increasing the surety bond for brokers and freight forwarders from $10,000 to $100,000.

INCREASED LIABILITY

With the increased bond amount comes increased bond liability, which makes sureties stricter and raises the bar for freight brokers. This will help weed out scammers who are obtaining active authority, which will protect shippers, brokers, and carriers.

One of the best ways for shippers, brokers, and carriers to protect themselves against load board scams is to partner with a third-party logistics (3PL) firm. This partnership gives shippers and brokers the advantage of using the 3PL's trusted carrier base, and provides carriers the security of being associated with a financially sound organization. ■


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Congressman Lynn A. Westmoreland represents Georgia's Third Congressional District in the U.S. House of Representatives, 202-225-5901 • *leslie.shedd@mail.house.gov*

ECODEV

ISSUES AFFECTING | **ECONOMIC DEVELOPMENT**

by Congressman Lynn A. Westmoreland

On a Roll: How a New Auto Plant Revived a Town

Six years ago, West Point, Ga., was on the brink of becoming a ghost town. More than 16,000 of the town's factory jobs disappeared in the past 20 years, leading to high unemployment, a low standard of living, and a lost sense of community.

But then, something amazing happened. In 2006, South Korean car company Kia Motors Corporation announced plans to build its first American plant, investing $1 billion in West Point and creating at least 2,500 jobs. Suddenly, the town was a flurry of economic activity.

Since production began in November 2009, Kia Motors Manufacturing of Georgia has hired more than 3,000 employees and, together with the more than 60 on-site and local suppliers, is responsible for creating more than 10,000 jobs in West Point and the surrounding area.

To meet demand, Kia has invested another $100 million in the plant, and is planning to hire an additional 200 employees in 2012. When it comes to the Kia plant in West Point, the sky's the limit.

Unfortunately, the same cannot be said of many domestic automakers. In late 2008, Chrysler and General Motors were at a breaking point. Even with the $80-billion bailout the government gave them, both declared bankruptcy in 2009. At the same time, Kia kept seeing success. It is the fastest growing automotive brand in the United States, and has gained market share for 17 consecutive years.

PULLING AHEAD

How did Kia achieve unprecedented success while others around it were failing? For starters, at a time when many car companies concentrated on expensive vehicles with low gas mileage, Kia focused on offering affordable, high-quality vehicles with generous warranties. It also began designing and engineering its vehicles for local markets, rather than creating one-size-fits-all cars.

These factors certainly played a role in Kia's success. But the reason Kia prospered while GM and Chrysler sank was the outlandish labor contracts aggressive labor unions saddled on Detroit automakers. After decades of paying exorbitant wages and providing unrealistic retirement packages, Detroit automakers simply couldn't keep up anymore.

While Chrysler, Ford, and GM cut 83,000 jobs in Michigan between 1993 and 2008, 91,000 new auto manufacturing jobs were created in Alabama, Mississippi, Tennessee, Kentucky, Georgia, North Carolina, South Carolina, Virginia, and Texas, according to a 2008 American Legislative Exchange Council study. The industry wasn't shrinking; auto companies just couldn't keep up with the cost of business in unionized states such as Michigan.

While other states continue to give more power to unions, raise minimum wage standards, and increase the tax burden on local companies, Georgia has done the opposite. When Kia expressed an interest in opening its plant in our state, Georgia officials worked to provide incentives for locating here, helped the company find the ideal site to construct its facility, and introduced Kia to the Quick Start job training program.

This all leads to one very clear conclusion: Free enterprise thrives when it is free. The more taxes, the more regulations, and the more demands we put on our companies, the less likely it is they will succeed. Nothing demonstrates that fact more than the Kia plant in West Point. ■


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Christian Rueckerl is vice president of sales, Kardex Remstar.
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VIEWPOINT

by Christian Rueckerl

Four Simple Questions for Improved Picking Performance

The process of receiving a product into inventory is just as important as picking or removing it from inventory. A solid slotting plan for receiving and storing products in a facility supports quicker and more accurate picking.

Slotting is the concept of using data analysis to assign every part a location based on its specific attributes. While the work involved in slotting items in a storage system can be complicated, at its core are four simple questions:

1. What is the best storage equipment for this item? Matching an item to the appropriate storage equipment is the most important factor in slotting. Companies often settle this question, however, by using storage practices they already have in place.

Equipment options range from carousels to racks to drawer cabinets. Most storage systems can operate well with just a handful of storage zones. It is important to review each part individually and take into account not only how much space is required, but also how often that part is accessed.

Tip: Parts often need to be stored in various quantities in more than one storage location or device for efficient material flow.

2. How many of each part do we need to store? The answer to this question will almost always be "as few as possible." For medium-sized and medium-velocity stockkeeping units (SKUs) stored in a horizontal carousel, a good rule of thumb is to keep a 20-day supply. This quantity provides a sufficient amount of stock without requiring frequent replenishment.

Tip: Sometimes the number of parts that should be stored doesn't match what is currently stored. Don't be afraid to make a change.

3. What size storage location (cell) should be used? Keeping the number of cell sizes to a minimum allows random storage to be incorporated effectively, makes the loading process a breeze, and limits "paralysis by analysis."

Tip: Churning data can only take you so far. A hands-on approach is always best, so go to the warehouse, look at the different cell sizes, and decide whether or not they are appropriate.

4. Where does the cell go? Put the faster-moving items in cells that are easy to access. It is important to examine the storage equipment and decide if there is a tactical advantage to storing fast movers in them.

If there is, determine the best way to get your fastest movers into those cells. It is often a good idea to postpone this step until you are at least partially through your slotting exercise so you know how many of each cell size will be available.

Tip: Consider pick density when configuring cell layouts. For example, it is often better to store four smaller, medium-moving parts that get four daily hits in a prime, accessible space than one larger, fast-moving part that gets 10 daily hits. By storing the four medium-moving parts, the prime space will get 16 daily hits instead of 10.

EVERYTHING IN ITS PLACE

Slotting an entire warehouse is a sizable undertaking, but the rewards greatly outweigh the time investment. When done properly, slotting can support a number of lean objectives, such as reducing obsolete inventory, minimizing stock quantities, and decreasing part retrieval times to improve flow.

To get the ball rolling, focus on the fastest-moving parts in your warehouse. Ensure you are storing them in an efficient quantity and location, and gauge the immediate benefits gained from the process. You'll be on your way to total slotting success. ■

Dr. Oliver Hedgepeth is program director, reverse logistics management, for American Public University, 703-966-5847 • *whedgepeth@apus.edu*

SMART MOVES

EDUCATION AND CAREER ADVANCEMENT

by Dr. Oliver Hedgepeth

Online Education: An Ideal Medium for Logistics Professionals

Although continuing education offers logistics professionals many benefits, long hours, shift schedules, travel, and jobs in remote locations can make attending classes difficult. Online education has quickly emerged as a preferred learning method for logistics professionals.

Today's online classroom offers dynamic peer interaction, based more on real-world, practical applications than traditional theory. This focus enables students to apply lessons to their work the very next day.

The technology used by online universities allows for a variety of interactions between students and teachers, including video presentations, links to outside videos and resources, and online conversations via message board-type applications. Unlike traditional classrooms, discussion is not limited to the time teachers and students spend in a room together.

Some professors teaching online courses create personalized announcements using audio and video to virtually unite and interact with students. Such focus allows instructors to use discussion forums as a conversational medium between faculty and students to build a virtual learning community.

Each online student – from the soldier in the Middle East to the warehouse operator in Seattle – has a unique voice within such classrooms. Students enjoy collaborating and interacting with each other, and build strong connections in the online environment.

DIFFERENT FROM BRICK-AND-MORTAR LEARNING

Without geographic limitations, online students can share the experiences and viewpoints of classmates across the country and around the world. Online students tend to be adult learners between 25 and 65, with an average age of 44. They typically have five to 20 years of work experience, and bring lessons learned in the field into class discussions and assignments. They are working adults looking for a promotion, or new job or career.

The interactive nature of online classes allows students to share their experiences, bringing a new depth and applicability to lessons. The variety of backgrounds brought together in the digital classroom would be difficult to duplicate in a brick-and-mortar university.

Online programs also tend to be more flexible than the established degree programs of traditional universities, allowing students to take and earn collective credit for classes across varied disciplines. Because of the low overhead, online universities typically offer more classes in niche areas than would be practical at a traditional university.

This flexibility fits the inter-disciplinary nature of the logistics field, which combines principles of operations, finance, marketing, and acquisition management, along with more specialized areas such as reverse logistics. Logistics professionals can increase their knowledge of all these topics through an online university and apply their efforts toward degree credit.

The online platform eliminates borders and connects students, faculty, and staff from around the world in one place for one common purpose: education. Online learning represents an ideal medium for logistics experts to bring their real-world industry perspective into the classroom. ■


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Karen Lobdell is director,
global solutions at Integration Point,
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SCSECURITY

by Karen Lobdell

Are You Effectively Managing Supply Chain Risk?

The events of Sept. 11, 2001, changed the way global businesses operate. The need for supply chain transparency has expanded beyond shipment tracking to include knowing trading partners' background, the processes they handle, and the risk inherent at each stage of the supply chain from the factory floor to ultimate destination.

Many regulations affect the safety and security considerations shippers must address, including:

■ **Product safety.** The Consumer Product Safety Improvement Act (CPSIA) makes it critical for companies to monitor overseas business partners to ensure imported products are safe.

■ **Environmental concerns.** The Lacey Act, which combats trafficking of illegal wildlife, fish, and plants, requires importers to certify country of origin and details such as the exact genus and species.

■ **Food safety.** The new Food Safety Modernization Act provides the Food and Drug Administration with enhanced authority over imported goods. It includes establishing that importers have an explicit responsibility to verify that their foreign suppliers have adequate preventive controls in place to ensure they produce safe food.

■ **Labor issues.** The California Transparency in Supply Chain Act, which went into effect on Jan. 1, 2012, is intended to bring visibility to forced labor and human trafficking by requiring companies to ensure suppliers comply with company standards.

■ **Social responsibility.** Corporate social responsibility is receiving more executive attention as regulations address environmental concerns and fair operating practices, such as the Foreign Corrupt Practices Act.

A GLOBAL EFFORT

Although these regulations and initiatives are U.S. law, they are not limited to the United States. Similar regulations exist in other countries. Customs administrations and other government agencies continually seek ways to focus limited resources on high-risk shipments crossing international borders.

The ability to facilitate trade to boost speed to market is directly related to the level of risk presented by an importer/exporter. With ongoing supply chain threats, it is wise for companies operating across borders to consider what steps they can take to minimize risk, and position themselves to be deemed a trusted trader.

Risk assessment efforts are most effective when initiated early in the decision-making process. Global sourcing decisions must look past cost factors because the cost of skimping on risk management can be high. Consider the retailer who was fined $2 million and prohibited from importing or entering goods into U.S. commerce after violating CPSIA rules. Or the well-known sports apparel retailer that was fined $1.5 million to settle allegations of unfair labor practices overseas.

Determining risk is a qualitative/quantitative process that evaluates threats, vulnerabilities, and consequences. Although companies may not have control over all supply chain threats, they must have a clear understanding of where those threats exist. Properly evaluating trading partners helps identify vulnerabilities and mitigate potential risk.

As companies continue to increase their global procurement, direct importing, and offshore manufacturing and assembly processes, logistics professionals need to be aware of factors that may fall outside their specific area of responsibility, but have a direct impact on the supply chain and the timely movement of goods from origin to destination. ■


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Brendan Lowe is president, Aldata,
617-986-5010 • *aldata@famapr.com*

IT MATTERS

by Brendan Lowe

5 Steps to Improving Food Product Traceability

Food safety represents a pressing concern for consumers and food retailers. Several high-profile incidents have cost billions due to sickened consumers, lost sales, and contaminated products. If these occurrences have taught U.S. retailers anything, it's that the ability to react swiftly and appropriately to food-related issues is essential.

The passage of the U.S. Food and Drug Administration's (FDA) Food Safety Modernization Act has also increased pressure on food retailers to enhance traceability throughout the supply chain. In addition to granting the FDA power to mandate recalls, the legislation requires food facilities to evaluate hazards, implement preventive controls, and create food safety plans.

Under the new law, it is more important than ever that retailers have full visibility into their entire supply chain so they can track and trace goods. Retailers can also use traceability to help assure customers they can react swiftly to food safety incidents.

Past high-profile recalls have taken months to execute – a lapse that can hurt consumer confidence and sales. Consumers who fall ill due to contaminated goods may be reluctant to return to the store where they purchased the products.

Retailers can implement technology and processes to increase traceability and gain greater visibility into their supply chain. Here are five steps to help get a better view:

1. Collaborate with suppliers. Retailers need to ensure their suppliers have systems and software in place for forward and backward lot tracing, and the ability to easily link lot numbers with recalled ingredients.

For instance, suppliers should be able to determine when a lot was received in inventory and where the lot was consumed in the manufacturing process. This allows them to link the lot to the finished product's bar-code label. If a product is recalled, the supplier can use its systems to identify the finished goods that were produced with the ingredient lot, and notify customers who purchased those goods.

2. Implement tracking systems and software. Traceability is about tracking and recording product movement. Organizations can use tools such as lot codes, bar codes, and RFID to track goods. Once a system is in place, a retailer who is notified that a recall for a particular lot has been initiated can pinpoint exactly where these products are within the supply chain.

3. Integrate traceability with existing technology. Use existing systems to record the transformation and movement of goods from the warehouse to stores. Many warehouse management and order preparation systems can be used to record lot numbers and other essential information.

4. Create an alerts system. With an effective events-monitoring system, companies can notify managers across the supply chain when an incident occurs. This enables retailers to freeze inventory, whether it's in the store, the warehouse, or in transit. By linking these alerts to retailers' point-of-sale systems, they can also prevent further sales of the affected product.

5. Communicate with your customers. Retailers can use customer loyalty programs, such as rewards cards, to inform customers about product recalls. More retailers are taking advantage of these programs to send messages about contaminated products. Speedy alerts to customers can help further contain a recall. ■


It's
pronounced
Sigh´-ah.

Trent Dye is director, Paramount Freight Systems,
800-799-5144 • *trent.dye@drivepfs.com*

CARRIERS CORNER

by Trent Dye

How Carriers Keep Great Drivers Behind the Wheel

Motor carriers face a constant loss of qualified drivers, with some experiencing up to 150-percent turnover annually. Replacing a driver costs carriers $12,000 to $15,000 in separation, replacement, and training costs—a significant hit to their bottom line. High driver turnover also undermines carrier safety performance and customer service.

To meet shipper demand, some carriers attempt to handle high freight volumes with a reduced driver pool, which can result in accidents and low driver morale. Conflict among shippers, carriers, and receivers may also create loading and unloading delays in already tighter-than-average scheduling.

Some driver turnover is necessary, and benefits shippers and carriers. Carriers must sometimes let drivers go because their poor performance creates safety or customer service issues. This type of turnover saves shippers and carriers money in the long run, and helps support the carrier's performance standards.

Negative turnover, however, is when carriers lose drivers who are a valuable part of the organization. Many carriers make significant efforts to prevent this type of turnover by addressing common reasons drivers leave. Some of the most common causes of negative turnover are:

- Lack of respect
- Lack of sense of belonging
- Time demands of the job
- Insufficient benefits
- Inadequate compensation

RETAIN, DON'T REPLACE

No quick solution can fix all the causes of driver turnover, but carriers might benefit from spending more money on retention programs, instead of recruiting programs. Many carriers are throwing money away on recruiting and advertising, when their best recruiters are, in fact, their current drivers. A good word from one driver to another about a company is as good as gold when it comes to recruiting.

Eventually, consumers will feel the effect of increased driver turnover on the transportation industry. Shippers will be forced to expand their carrier pools and investigate other transportation modes to move their products, adding costs that will impact the bottom line. Increased transportation costs and carrier capacity shortages may ultimately force them to raise product prices.

Freight delays and disruption are also a possible consequence of the driver shortage. The resulting stockouts and late home deliveries will add to consumer dissatisfaction.

High driver turnover in an industry that already faces a shortage of qualified drivers will continue to be an issue, and it will take the entire trucking industry to combat it. The average age of U.S. truck drivers is increasing, and the lack of younger drivers entering the industry will force carriers to improve their business models to accommodate current and incoming drivers' needs, either through pay structure, haul length, or position quality.

Addressing sources of driver dissatisfaction is the best way to accommodate an increasing need for trucks to haul freight—and drivers to handle them. ■

Sunny Nastase is vice president, customer solutions, sustainable solutions, UPS,
404-828-7183 • *lmallis@ups.com*

GREEN LANDSCAPE

SUSTAINABILITY IN THE SUPPLY CHAIN

by Sunny Nastase

Launching a Sustainability Initiative Can Be as Easy as 1-2-3

Over the past decade, sustainability has evolved from a buzzword to an established component of good business. While some organizations and industries may have operations that naturally lend themselves to sustainability efforts, all companies should be empowered to review their shipping and supply chain operations through the lens of sustainability.

Sustainability programs are not one-size-fits-all endeavors, however. Transporting perishable food products requires a much different approach than shipping the latest high-tech gadgets, for example. Because each organization possesses unique needs, it is important to take a strategic approach to sustainability planning.

Here are three steps to launching a sustainability initiative at your company.

1. Determine the effort's primary purpose. While sustainability generates clear environmental benefits, it can also create long-term, bottom-line returns from reduced consumption. Identifying the program's goal will help outline the vision, determine metrics, and garner the necessary internal support to proceed.

2. Create a plan. Once you establish a well-defined purpose, your organization must determine how to pursue it. Start by setting short- and long-term goals, and the appropriate budgets, staffing, and potential partners.

Evaluate data related to sustainability to determine your company's energy use and carbon impact. Using this information to create a baseline provides metrics for tracking the results of implemented sustainability efforts.

Your product's unique nature will determine which sustainable options are most applicable. If your company sells non-perishable goods, it can benefit from more fuel-efficient transportation modes, such as rail or ocean. If immediacy is critical to success, carbon-neutral shipping—which allows businesses to purchase carbon offsets to mitigate their environmental impact—may be a better solution.

3. Recruit an experienced partner. Even with a strong internal team focused on creating greater sustainability, your company may need outside expertise to drive the greatest environmental impact reduction—especially if this is your first time creating a sustainability initiative.

Choose a partner with the logistics infrastructure to meet your needs. For example, global businesses should seek to partner with experts who possess a global network and can advise on which transportation modes will move materials most efficiently and with the least environmental impact.

Your partner should also understand the intricacies of sustainability that may be foreign to your daily activities, such as how to purchase retired carbon offsets. Purchasing carbon offsets allows companies to mitigate the environmental footprint they create through transportation and shipping. Working with your logistics partner, you may be able to identify an environmental program that aligns with your company's philanthropic interests.

Your organization can examine its environmental impact and take steps to mitigate it. By establishing goals, creating a plan unique to your business, and enlisting the right partner, companies can be better stewards of the environment while still operating successfully. Following these three easy steps will put you and your company on the path to sustainability leadership. ■


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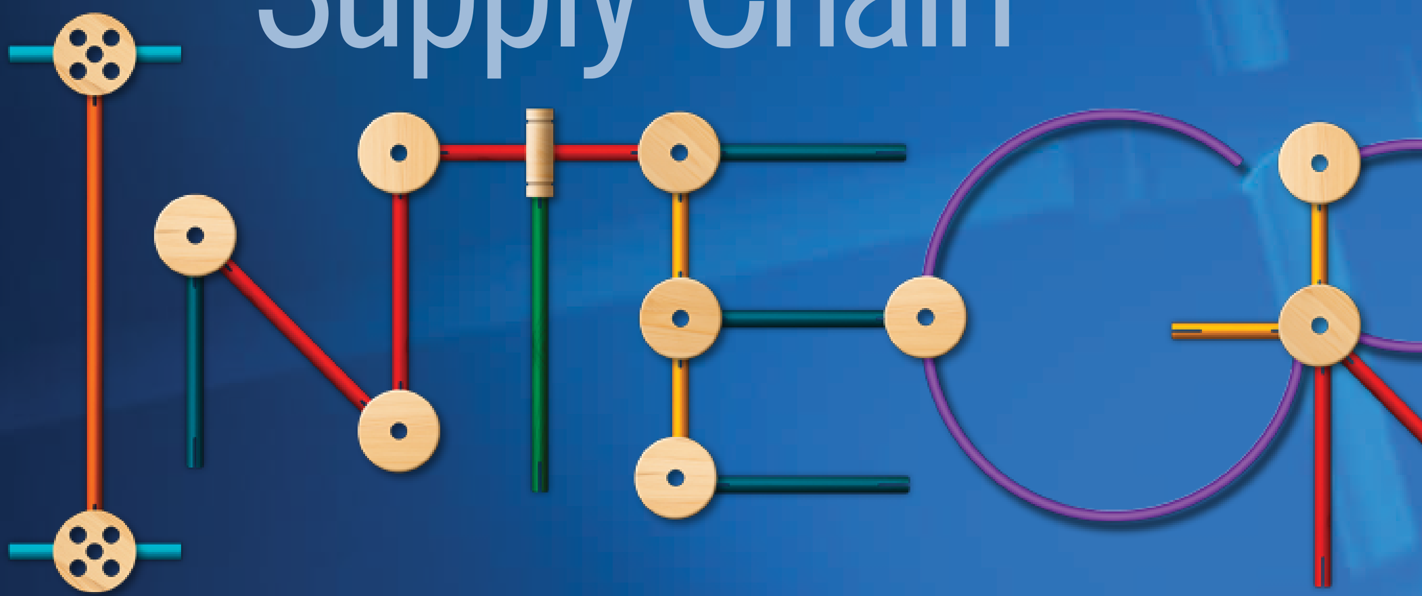
Supply Chain

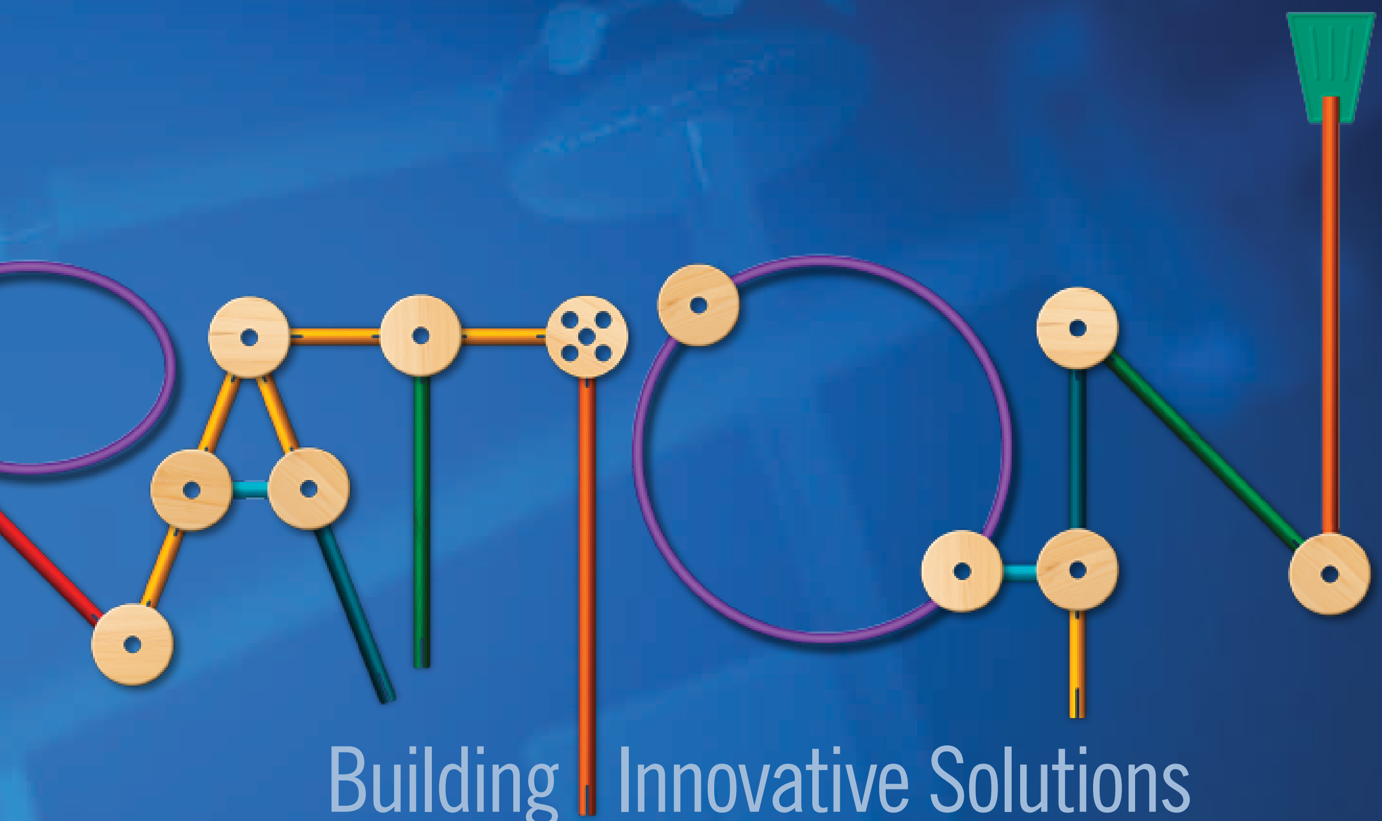


by Joseph O'Reilly

One hundred years ago, Charles H. Pajeau and Robert Pettit invented a new way for children to create – Tinkertoys. Playing with the toys required nothing more than wooden dowels, joints, wheels, and a heavy dose of imagination. Tinkertoys taught children how to improvise, imagine, and integrate different parts in innovative ways to create something new. This simple toy parallels the ways that today's supply chain managers fit new pieces of their networks together to redeploy assets and better face their ever-changing challenges.

As the past few years have proven, when

IN THIS SECTION: The Dawning of a New Era (pg. 90) Making e-Fulfillment a Pet



Building Innovative Solutions

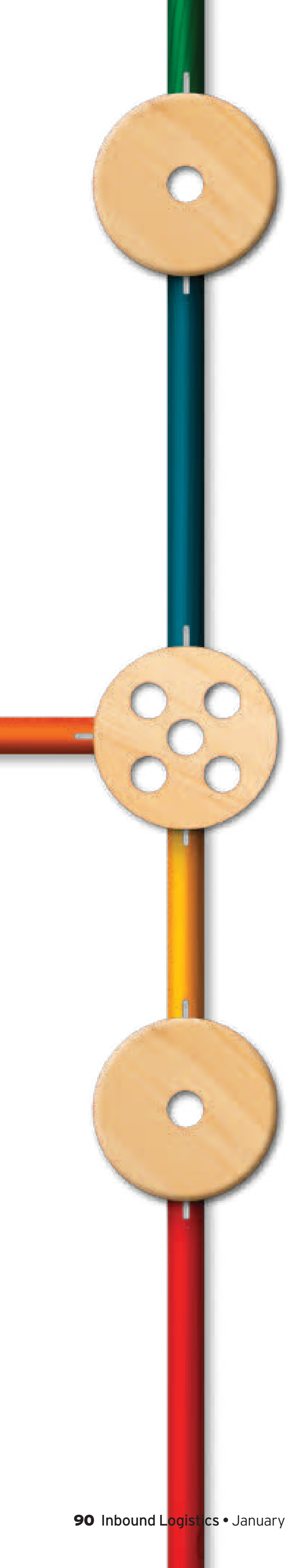
economies, industries, or supply chains fail, there is a rush to rebuild and reintegrate parts of the supply chain. The impulse to rebuild may be triggered by desperation, or changes in leadership, corporate philosophy, technology, go-to-market strategy, or customer demand. Reintegration may be targeted at specific business units or functions. The change can be wholesale or discriminate, but the hope is that as companies rebuild and reintegrate, they are creating better, stronger, more resilient supply chain networks.

At the center of this reintegration process are logisticians. They are the drivers of supply chain integration – selecting new carriers, new solutions providers, new modal networks, new ports, new locations, and new technology, all with a greater expectation of increased performance.

You'll read about these supply chain "tinkerers" in the following case studies, and see how they work together to create synergies and new touchpoints across their value chains.

Like Tinkertoys, supply chain integration is a process of imagination, trial and error, borrowing parts from different places and creatively piecing them together to build a more workable logistics solution.

Project (pg. 100) ⊗ **United They Stand for Corporate Responsibility** (pg. 106) ⊗ **Call of the X-Duty** (pg. 112) ⊗ **Bucking Convention** (pg. 120)



INTEGRATION

The Dawning of a New Era

When baseball cap maker New Era's business growth hit critical mass, it realigned its distribution operations, fusing Menlo Worldwide Logistics' outsourced solutions with its global supply chain.

Major League Baseball players have always tipped their tops to Buffalo, N.Y.-based New Era Cap Company, which has been manufacturing hats since the 1920s.

In 1934, the company started making hats for the Cleveland Indians. Twenty years later, New Era introduced the "59Fifty," popularly known today as the fitted baseball cap.

Since 1993, the company has been the exclusive licensed on-field provider of baseball caps for Major League Baseball and its affiliates. It also serves the needs of international baseball leagues around the world, NCAA athletic departments, and the sports world in general.

During the past decade, however, the company has branched out beyond cap making, introducing accessories and apparel into an expanding product line. By 2005, the company was growing at a 35-percent clip and approaching critical mass in terms of what products it could move on its own.

"We operated our own warehouse in Mobile, Ala., and were well above our target in the fourth year of a five-year growth plan," says Jim Patterson, COO and senior vice president, New Era Cap Company. "We exceeded our capacity to ship product from the warehouse,

so we needed an immediate solution to relieve some of that stress."

New Era decided to partner with San Mateo, Calif.-based Menlo Worldwide Logistics, occupying a small space in the third-party logistics (3PL) provider's multi-client distribution facility in Kansas City. It was a small step to test the waters of outsourcing. "We didn't want to be a lifestyle brand *and* a warehousing company," recalls Patterson.

DIVESTING DISTRIBUTION

By 2006, New Era was also working with Menlo at a multi-client distribution center (DC) in Hong Kong. Later that year, the manufacturer opened a dedicated facility in Pennsylvania with Menlo, specifically for New Era product distribution.

As New Era's manufacturing and distribution footprint evolved, it outgrew its existing DC structure. In 2009, it consolidated U.S. warehouse operations in Alabama and Pennsylvania into one location in Harrisburg, Pa., then moved to a larger warehouse in Harrisburg, followed by a shared Menlo facility in Toronto to support growth in Canada. An SAP enterprise resource planning (ERP) upgrade and further integration with Menlo's warehouse management system (WMS) helped ease the transition.

In 2010, New Era debuted a distribution presence at Menlo's facility in Eersel, The Netherlands. In 2012, it begins a new era—literally—as the official baseball cap provider of the National Football League.

THE CHALLENGE OF FLEXIBILITY

New Era has grown remarkably over the past few years. Its partnership with Menlo has been a measured exercise in divesting a non-core distribution function and integrating an outsourced solution into its global supply chain.

THE COMPONENTS

COMPANIES: Apparel and baseball cap manufacturer New Era; third-party logistics service provider Menlo Worldwide Logistics

CHALLENGES: Insufficient warehouse capacity; constant SKU turnover; shifting lead times for globally sourced products.

GOAL: Enhance inbound product delivery date visibility; improve service and reduce overall operating costs; decrease New Era's involvement in distribution operations.

APPROACH: Consolidate warehouse operations; upgrade New Era's enterprise resource planning systems and integrate with Menlo's warehouse management system.

RESULT: Advanced visibility of inbound products and delivery dates; improved fulfillment efficiency; ability to focus on core competencies instead of distribution operations.

"If a customer wants an item in a pink box with a red ribbon, New Era will do it," says Jeff Holker, senior logistics manager, Menlo Worldwide Logistics. That flexibility presents challenges, even for a 3PL.

"Many 3PLs try to get their customers' business to conform to a standardized logistics solution. They want to bring goods in, store them, then ship them out, with no modifications or special services," Holker notes. "That's not realistic in today's environment. We do a great deal of value-added work for New Era, whether it's custom labeling or building packages in the DC."

Because it's so accommodating to customer needs, New Era quickly recognized that to successfully transition from a domestic manufacturer to a global lifestyle brand, it needed outside expertise.

"Our core competency is providing a customized product to our customers when they need it, then replenishing quickly in different quantities," says Patterson. "We want to move away from manufacturing and distribution."

It has been a natural evolution, and one that many branded apparel companies experience as they grow out of their original skin and begin shedding non-core capabilities.

"New Era needed capacity, and its operation wasn't sophisticated or automated," says Holker. "We saw opportunity to help on the distribution side."

The one thing New Era demanded of itself, and from its 3PL partner, was flexibility to meet customer demand.

"When it comes to integration and electronic data interchange (EDI), everyone emphasizes standards," says David Velasquez, senior director of global logistics, New Era Cap. "But we are a customized company. There were no standards for what we needed."

BACKROOM SHAKE UP

New Era's expanding product portfolio and global presence opened the door for Menlo to target new areas for improvement from the inside out.

What began as a pure commodity need—overflow warehouse space—quickly turned into a platform for further integration.

"When we assessed our short-term goals, we were also thinking ahead," says Patterson. "We felt we could integrate with Menlo at important points such as information technology and operations."

When New Era consolidated its own

warehouse to Harrisburg in an effort to drive better service and reduce overall operating costs, Menlo took over distribution operations. Together, the two companies began identifying ways to improve efficiency and customer service, beginning with technology.

"Originally, we used a manual-based PeopleSoft ERP/WMS solution," says Velasquez. "But as our relationship with Menlo grew, we wanted to share information more efficiently. So we tied Menlo's WMS directly into PeopleSoft to pass along information electronically."

New Era has since upgraded its ERP to SAP, while continuing to expand its systems integration with Menlo. The ERP is equipped with problem switches and flags that dictate whether an order moves to a plant or DC, so the worker picking, packing, and shipping doesn't have to leave the WMS for direction.

In New Era's current process, there

Thanks to an integrated enterprise resource planning solution, Menlo can provide New Era with advanced inbound product and delivery date visibility that allows the sportswear leader to meet retailers' inventory demands.

are few stops, and no paper on the floor. Orders that used to require weeks to fulfill now take hours.

"This integration is critical because our business is so dynamic," Velasquez adds. "Standardization in DCs ensures the execution level we expect is consistent across operations."

NEW HORIZONS

In 2009, New Era acquired apparel manufacturer 5th & Ocean, greatly expanding its retail and private-label lines beyond headwear. The Miami-based company makes sports and fashion apparel for men, women, and children; its customers include major U.S. sports leagues and retailers such as Victoria's Secret.

New Era's growing product line and worldwide presence—it has a licensing agreement with the Korean Baseball Organization, for example, and recently opened a retail store in Hong Kong—played into Menlo's value proposition as a global 3PL.

"Our relationship with Menlo started as order-based and transactional," says Velasquez. "Today, we send them purchase order information as soon as it is issued to our factories.

"Menlo has advanced inbound product and delivery date visibility," he continues. "This information is crucial from a distribution perspective because so many different products flow through our facilities.

"Stock lines need to be replenished," Velasquez adds. "The customization we offer creates constant SKU turnover, which forces us to pick more efficiently, manage inbound movements, and constantly analyze the process. It changes month to month, operation to operation, in Hong Kong and Europe. We have to understand how these upstream pulses impact back-end operations."

For New Era, Menlo has transformed from a commoditized distribution provider to a valued supply chain partner that continues to push the outsourcing envelope in new directions.

"When we assessed our short-term goals, we were also thinking ahead. We felt we could integrate with Menlo at important points such as information technology and operations."

—**Jim Patterson,** COO and senior vice president, New Era Cap Company

Value stream mapping is one example. New Era's supply chain has become more complex and global since it began its relationship with Menlo.

The 3PL has helped New Era map its entire supply chain, from the time it places a purchase order with the manufacturer to when product is received, stored, and shipped out—all with the goal of shortening the supply chain.

"When it began to source offshore, New Era had to wrestle with a supply chain shift that increased lead times," says Holker. "It couldn't afford to change its response time, even if the length of its supply chain increased dramatically."

FORWARD-THINKING DESIGNS

On the domestic side, Menlo has similarly leveraged its resources to identify the best distribution network for New Era's needs—fully understanding that this model is fluid and bound to change. When the company moved away from operating its own DC to a Menlo-operated Harrisburg facility, there was a well-thought-out reason.

"Menlo helped us look at our customer base and determine where product was shipping, secured a location, and improved our customer service levels by reducing transport distances," says Patterson. "From an inbound perspective, it put us in a better position to receive overseas shipments."

New Era's dedicated DC realignment also helped the company respond faster to demand, especially as the business grew.

In 2005, New Era's distribution

model was rather conventional. Major League Baseball was its primary license. Product was programmed, coming into the warehouse as bulk and shipping out much the same way.

Increasing product diversification changed the way the company moved SKUs and different-sized boxes through the warehouse.

With the SAP ERP integration firmly in place by 2010, New Era was able to capitalize on its quick replenishment program, which allows customers to place orders and receive product in their stores in as few as 48 hours.

It's a popular option for retailers that don't want to carry a lot of inventory or are eager to capitalize on demand–such as a commemorative cap celebrating a favorite team's championship–by improving service levels and efficiency through its distribution network.

With New Era primed to become the officially licensed baseball cap provider for the National Football League in 2012, there's little doubt the company's arc is on an accelerated path. So is its outsourcing strategy.

> "When it began to source offshore, New Era had to wrestle with a supply chain shift that increased lead times. It couldn't afford to change its response time, even if the length of its supply chain increased dramatically."
>
> —**Jeff Holker,** senior logistics manager, Menlo Worldwide Logistics

Menlo is still primarily a distribution partner, but its full slate of transportation and supply chain capabilities, and adherence to lean principles, lends itself to New Era's goal of facilitating growth as a lifestyle brand, especially on a global scale.

"Hong Kong was our first international operation," says Holker. "We don't manage the inbound transportation from suppliers to the DC, but we handle distribution and outbound transportation.

"Europe was the next location," he continues. "We manage the distribution and about half the inbound movements. We're currently working on a proposal for Mexico that will account for all inbound and outbound transportation."

Part of Menlo's lean methodology is continuous improvement. That means constant communication with New Era.

The 3PL hosts weekly conference calls with its Harrisburg DC, and bi-weekly conversations with its Toronto, Eersel, and Hong Kong multi-client facilities. As part of their arrangement, the companies hold quarterly reviews to assess how the partnership is progressing.

COMPARING NOTES

"Performance is our focus," Holker explains. "We also share a list of pain points with New Era. It's an open dialog about driving service up and holding costs down."

But the global economic recession has provided the best litmus test for gauging how well New Era's partnership with Menlo has performed. Retailers didn't want inventory. They wanted to get as lean as possible and maximize the power of their "buy" dollars, says Patterson.

"Our ability to use this integration, execute quick replenishment programs, and address needs allowed us to continue to grow our partnership with Menlo," he says. "We also strengthened our position with customers because we could better support them."

New Era is an apt name for a company that is reinventing its business and supply chain. Manufacturing caps remains its core function, but new layers–through acquisition and expansion–are shaping future growth.

INTEGRATION

Making e-Fulfillment a Pet Project

Start-up PetFlow.com had a solid business strategy, but integrating back-end logistics and fulfillment operations proved a challenge – until it implemented a warehouse management system.

In 2000, dot.com entrepreneurs Joe Speiser and Alex Zhardanvosky created Azoogle, a successful online advertising network that helped customers such as Netflix, Omaha Steaks, and Stamps.com build recurring client bases—in effect, repeatable business, the Holy Grail for any retailing organization.

After selling off a chunk of the business, the pair began looking for a new challenge. They wanted to build an e-commerce company from the product side out, offering a staple product that was recession-proof and invulnerable to seasonal demand. The operational model would be predicated on selling goods to consumers as part of a subscription-type service.

They formed PetFlow.com in March 2010, and began selling pet food four months later. Speiser and Zhardanvosky envisioned creating an e-commerce channel that would flow pet food directly to their customers' doorsteps on a regular schedule—similar to the service Netflix and Diapers.com offer their user communities.

The much-publicized 1999 failure of Pets.com—which had generated plenty of marketing sizzle, yet failed to deliver—created a vacuum in the online marketplace, with virtually no competition. Seeing an opportunity, Speiser and Zhardanvosky sought counsel from the former CEO of Pets.com to discuss what went wrong.

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"Pets.com had about 15,000 SKUs, but only 600 were dedicated to food," says Speiser. "Our focus has been pet food, which the customer has to buy regularly. Once you've established that purchase, you can upsell with items such as water bowls and toys—but you can't start there.

"Pets.com attacked the market from the wrong side," he continues. "It started with luxury pet items and hoped to sell the essentials later."

HANDLING THE SHIPPING

PetFlow also differentiated itself by focusing on the convenience factor of having an automatic replenishment system that effectively supplies more than 100 premium pet food brands. PetFlow offers a flat $4.95 shipping rate for all orders up to $59, with free shipping for purchases of $60 or more.

"We can't offer free next- or second-day shipping like Amazon can," says Speiser. "We have one warehouse in New Jersey and another in Las Vegas. But with a scheduled delivery service, we can account for the transportation time and make sure an order arrives when it's supposed to.

"Customers don't care how their order is sent, as long as they get it when they need it," he adds. "That's how you save money on shipping."

Combining a targeted product and consumer niche with a well-planned business model positioned PetFlow for success right from the beginning. It wanted to change the way pet owners bought food, taking them out of the shopping experience.

"We didn't just want to sell pet food," says Speiser. "A recurring customer base service is very defensible; it's how you grow a business. It's difficult for competitors to come in and take away those buyers.

"Let customers set the schedule, and they will be yours—as long as you don't mess up," he adds.

Yet somehow, PetFlow wound up in the doghouse.

THE COMPONENTS

COMPANIES: Online retailer PetFlow.com; warehouse management system (WMS) provider Synergy Logistics

CHALLENGES: The third-party logistics provider hired to manage the subscription-based pet food deliveries couldn't keep up with PetFlow's rapid growth.

GOAL: Manage inventory to provide on-time scheduled deliveries.

APPROACH: Petflow brought fulfillment in-house and implemented the *Snapfulfil* WMS, deployed on a software-as-a-service (SaaS) basis.

RESULT: The SaaS deployment provided a quick, low-cost technology solution, which allowed PetFlow to take over its fulfillment operations without a large capital investment.

INTEGRATING FRONT WITH BACK END

One of the unique challenges that start-ups such as PetFlow often encounter is how to integrate a solid business plan with a logistics and fulfillment strategy that is up to the task.

Speiser and Zhardanvosky were veterans of the online advertising world. They knew what consumers wanted and how to sell products. They just weren't sure how to execute the back-room plan.

"It's hard to start up an e-commerce company without a third-party logistics (3PL) provider," says Speiser.

"You don't have efficiencies or economies," he continues. "You can't lease a 100,000-square-foot warehouse to move 10 orders a day."

PetFlow partnered with a 3PL to manage its e-fulfillment operation. But signals got dropped. PetFlow began growing at an accelerated pace, and the 3PL couldn't keep up.

"We partnered with a company that we thought could manage our forecasted growth," Speiser says. "We didn't know the provider didn't believe our projections."

Whether it was failing to buy enough racks and equipment to store and move product or not scaling labor fast enough, the 3PL couldn't deliver. Its warehouse management system (WMS) was overloaded. PetFlow quickly outgrew the 3PL as quality assurances and customer service started to lag.

Speiser and Zhardanvosky considered finding another 3PL, but given their needs, experience, and entrepreneurial independence, that approach didn't make sense.

"PetFlow doesn't have a high concentration of SKUs," Speiser explains. "Among the 5,000 unique products we sell, there isn't a great deal of similarity in our daily shipments. Pickers are constantly moving, building different orders. Our average order weighs 35 pounds and takes up a lot of space, which generates costs. The 3PLs we considered didn't have the necessary pick/pack intelligence embedded in their WMS offerings to handle our needs."

SNAP TO DEMAND

PetFlow decided to find a WMS partner and bring fulfillment in-house. After considering a number of solutions, the company partnered with Synergy Logistics to implement its *Snapfulfil* software-as-a-service (SaaS) WMS.

Snapfulfil is a proprietary turnkey WMS solution developed by Synergy

Logistics, a UK-based software company with a U.S. division, Synergy North America, in Charleston, S.C. The subscription-based offering features a Tier I WMS with all essential scanning hardware and radio frequency (RF) infrastructure. Because it is a SaaS deployment, there is no up-front capital investment in computer equipment or IT overhead.

DIGGING INTO WMS

Snapfulfil caters to a broad user group, ranging from small and medium-sized businesses such as PetFlow to larger global companies, both shippers and intermediaries. Its value proposition is geared toward start-ups, sophisticated warehouse operations, and everything in between.

"We're currently taking a client live that would be considered a traditional WMS user," explains Lori Kesten, vice president of North American sales, Synergy North America. "It operates 13 warehouses and has existing processes that have evolved over time. The implementation process is longer because the company has to unwind what it has done in the past in order to achieve the full benefits of the new system."

That process of unwinding is part of any new technology integration. With PetFlow, Synergy had the luxury of setting the system up the way an e-commerce operation should work, without any barriers to implementation. It was a blank slate. As a result, Synergy was able to set up the system in 30 days—a condensed time frame unheard of for most traditional WMS installs.

"Having a cloud-based solution gets you up and running much faster than some other options," says Speiser. "Implementation time was extremely short. It was a matter of getting our ceilings wired with RF antennas, which we'd do for any WMS."

The price was also attractive. Even if the roll-out bombed, PetFlow could flip to another solution without losing too much money.

Finally, the flexibility to make changes in the cloud offered the e-commerce company greater latitude to tweak the system or push out changes as needed, rather than relying on costly upgrades. The *Snapfulfil* SaaS WMS solution is a single version, but every user receives a unique URL, functionality switches, databases, and interfaces. A company with multiple warehouses can specify different conditions within that instance. In PetFlow's case, for example, it meant tying the WMS into its existing customer relationship management system.

PetFlow capitalized on this aspect when it decided to alter its plan for small parcel deliveries. The company has a contract with FedEx to ship orders through its residential service.

"We realized that smaller orders falling below a certain weight class should move via FedEx SmartPost," says Speiser.

"We asked Synergy to make sure that any order going out below a certain weight threshold receives a different shipping label," he continues. "Within one day, they released a software patch. Then we were able to ship using SmartPost, which saves a lot of money."

DELIVERING PERFECT ORDERS

In December 2011, PetFlow began to diversify its online product portfolio beyond just pet food—a measured progression that stands in stark contrast to Pets.com's boom-and-bust trajectory.

That fable serves as a constant reminder of how fickle success can be. But PetFlow's business model, and the way demand triggers replenishment, creates an ideal platform for optimizing supply chain performance and making sure back-end fulfillment can match pre-determined sales and inventory needs.

"I know each week how many orders are going out, so I can staff up ahead of time," says Speiser. "Because we're bringing in product that has been pre-sold, I can plan inventory more effectively, without having to sit on it."

Even with some of its growing pains still raw, there is a sense that PetFlow's do-it-yourself entrepreneurial approach and baptism by fire is beginning to pay dividends beyond 10-percent-per-month sales growth.

Working with Synergy, PetFlow has created a back-end operation that lives up to the quality, convenience, and customer service pet owners demand.

"With the repeatable component of PetFlow's business, it's crucial to provide the perfect experience for the customer every single time," says Kesten.

Snapfulfil's robust WMS functionality supports that goal by delivering perfect orders. Thanks to the solution, PetFlow's fulfillment operation today is the cat's meow.

INTEGRATION

United They Stand for Corporate Responsibility

Grocery store chain United Supermarkets achieved its sustainability goals by certifying chain of custody within a tight-knit supplier network and integrating responsible practices into daily business operations.

Sustainability has had a pervasive impact across all supply chains in the past few years. Spurred by media exposure, consumer demands to be better global citizens, and corporate mandates to reduce costs, many companies have successfully made a business case for going green and sourcing conscientiously.

Companies are feeling heat from consumers, advocacy groups, government regulators, and peers to integrate corporate social responsibility (CSR) standards – which address environmental stewardship, sustainable sourcing, fair labor practices, and diversity – across the entire supply chain. Enforcing compliance by measuring performance and holding partners accountable is no small task. But the consequences of nonconformity, especially with regard to brand recognition and public awareness, are irreparable.

One of CSR's hallmarks is transparency, and big-name companies in a range of industries are taking steps in that direction. Technology giant Apple, for example, has become more forthcoming about identifying suppliers, preferring not to share regular headlines with Congolese warlords and conflict minerals. Nestlé partnered with the Fair Labor Association

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to send independent experts into Ivory Coast cocoa fields to ensure it is complying with child labor laws. Tiffany and Hasbro recently debuted their first-ever CSR reports, and McDonald's launched a mainstream advertising campaign inviting consumers to see where the Big Mac begins.

INTERNAL MOTIVATION

Smaller enterprises often don't face the same public scrutiny and pressure to invest in sustainability, but many are leveraging their smaller footprints as a platform for introducing sweeping changes inside and outside the organization.

One such company is Lubbock, Texas-based, family-owned grocery chain United Supermarkets. The company's sustainability ethos is characterized by grassroots common sense.

A self-distributing operation with distribution facilities in Lubbock and Roanoke, Texas, United currently operates 51 stores under four distinct brands – United Supermarkets, Market Street, Amigos United, and United Express – in 30 markets across northern and western Texas.

"The primary driving force behind our social responsibility efforts is our ownership family's commitment to doing the right thing," says Eddie Owens, director of communications and public relations for United Supermarkets. "This attitude permeates everything the company does."

United is fourth-generation owned and has been in business for 95 years. The family's values serve as a cornerstone for the way the company operates and engages with the community. United's green efforts include energy conservation within its stores, such as fluorescent lighting in all refrigerated cases; a bring-your-own-bag program; in-store recycling centers; and a Go Green Task Force that promotes cleaner living.

INITIATING A SEA CHANGE

The supermarket's most recent progression signals a full-circle turn as it extends sustainability all the way back to its food sources.

United became the first all-Texas grocery chain and only local grocer to obtain Marine Stewardship Council (MSC) certification, which ensures store-sold fish are caught using environmentally responsible fishing practices.

The London-based non-profit develops standards for sustainable fishing and seafood traceability to verify that seafood comes from, and can be traced back to, a sustainable fishery.

"The driving force behind our MSC certification was the personal commitment of Scott Nettles, our business director of market/seafood," says Owens. "A few years ago, Scott learned that some seafood species, such as orange roughy and Chilean sea bass, were threatened."

MSC certification provides assurance that wild fish species are procured responsibly, but that peace of mind comes with an additional cost. Paying

THE COMPONENTS

COMPANY: Grocery store chain United Supermarkets

CHALLENGES: Supporting corporate social responsibility.

GOAL: Ensure responsible seafood sourcing; promote environmental responsibility.

APPROACH: Obtain Marine Stewardship Council (MSC) certification; buy from MSC-certified suppliers; install fluorescent lighting in refrigerated cases; establish in-store recycling centers.

RESULT: All seafood sold in United Supermarkets stores is caught using environmentally responsible fishing practices; store programs save energy and reduce waste.

All seafood sold in United Supermarkets' stores – Amigos United, United Supermarkets, United Express, and Market Street – carries certification that it was caught using environmentally responsible fishing practices.


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a premium for quality products from a certified supplier passes a small price increase, ranging from 50 cents to one dollar per pound, along to consumers.

SUPPLIER SUPPORT

United sources all its seafood from Albuquerque-based Seattle Fish of New Mexico, which imports product from all over the world. Seattle Fish is also MSC certified, and has demonstrated a market-leading position in sustainable sourcing.

The company has explored supplementing wild-catch fisheries with purchases from responsible aquaculture suppliers, which raise and harvest fresh and saltwater animals for human consumption.

United's role in this chain of custody reveals how CSR compliance can be seeded and nurtured within a tight-knit network that organically expands and touches other parts of that supply chain and, eventually, other industries.

Companies are starting to perceive CSR as an integral force within their supply chains. It offers yet another platform to align disparate functional departments and business partners, tear down walls, and divine and share greater efficiencies and economies. In this manner, CSR becomes rooted throughout the corporate culture. That's a manifestation United Supermarkets can appreciate.

"We expect our vendor partners to uphold United's standards," says Owens. "We choose who we do business with based on their commitment to understanding and respecting our business philosophy."

The Third-Party Integrator's Role in CSR

Corporate social responsibility (CSR) denotes a commitment to integrating responsible practices into daily business operations. Many companies have a handle on consumer-facing efforts to make their operations more sustainable. Complications arise, however, when they work with three-tiered manufacturing and supplier networks in far-flung corners of the world where different value systems prevail.

While a company may observe its own standards and ethics for doing business, it is often difficult to hold global partners equally accountable.

"Many Fortune 100 companies' sustainability programs represent a weak link in their vendor relationships," says Jim Moore, vice president, supply chain solutions, Ryder. "This includes some of the best-known names and brands that are committed to sustainability internally, and present that message to customers. The problem is, they have a gap when taking these same standards back to their supply chains."

Third-party logistics (3PL) service providers such as Ryder have become lynchpins for aligning sustainability standards among shippers and their suppliers. They serve an intermediary role in fuel-consuming and carbon-emitting transportation activities, with influence both upstream and downstream in the supply chain.

"Shippers are increasingly focused on quantifying greenhouse gas emissions, and asking logistics service providers how they can leverage these programs," says Nanci Tellam, group director of environmental services and sustainability, Ryder. "They also want to know how we, as partners, can provide information related to their performance."

Ryder is working with a third-party recycling company to quantify greenhouse gases emitted during automotive waste recycling. This effort is in direct response to Ryder's reporting commitment through the Carbon Disclosure Project, a London-based organization that works with shareholders and corporations to disclose their greenhouse gas emissions.

Some companies are beginning to mandate that logistics service providers such as Ryder account for their green investments.

"We are seeing RFPs that require a description of our sustainability program," notes Moore. "I haven't seen a condition to monetize it yet, but it's becoming a requirement, so service providers have to build their skill and expertise."

A few of Ryder's large customers require reports on the greenhouse gases emitted during transportation. The 3PL is responsible for measuring and reporting the emissions of the upstream and downstream service providers it partners with.

Moore and Tellam expect to see more shippers demand these types of reporting activities and a shared pledge to reduce emissions and conserve fuel.

Conversely, Ryder will also be pushing out demand as it rates vendors and suggests areas for improvement.

"Some vendors we have pushed on the issue of environmental sustainability by asking them to quantify their metrics have thanked us for requiring that extra effort because their customers are now asking for the same data," explains Tellam.

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INTEGRATION

Call of the X-duty

The X-duty trailer may look like traditional dry van equipment, but on the inside it's a different story. Outside-the-box thinking allowed appliance maker Electrolux to connect its inbound and outbound shipment needs in one innovative transport solution.

When Nussbaum Trucking approached trailer manufacturer Wabash National with a straightforward yet speculatively wild question, it sparked a revolution in trailer innovation.

The revolution began in 2009, when Nussbaum was running a dedicated flatbed operation out of Webster City, Iowa, for Swedish appliance maker Electrolux.

"Electrolux's manufacturing plant was receiving raw steel deliveries via irregular flatbed routes from various carriers," says Brent Nussbaum, CEO of Normal, Ill.-based Nussbaum Trucking. "When times were tight, finding capacity wasn't an issue. But when the economy improved and the flatbed market contracted, transport costs rose through the roof. Fluctuating inbound flatbed pricing was a problem."

With flatbed rates swinging as much as 30 to 40 percent depending on demand, Electrolux wanted consistent inbound raw materials costs year-round. Ideally, it would unload inbound flatbed trucks and repurpose those assets for outbound hauls. But this approach was unrealistic given the oversized and unwieldy nature of the raw steel coils Electrolux was moving into the facility, the flatbed equipment necessary to transport them, and the finished appliances moving out, which required dry van trailers.


GEODIS
wilson

"Capacity that we couldn't use was leaving the plant," says Chad Spangler, director of inbound transportation for Charlotte, N.C.-based Electrolux USA.

In addition, Electrolux's St. Cloud, Minn., manufacturing plant experiences harsh weather, especially in the winter. Parking problems, workers battling the elements while unloading shipments, and difficulties strapping down cargo were common. And incidents of rusted steel and compromised product resulted in customer freight claims.

Inspired to find a better solution, Phil Braker, Nussbaum's vice president of operations, posed a question to Rod Ehrlich, chief technology officer for Lafayette, Ind.-based Wabash National: Would it be possible to create a fully enclosed 53-foot flatbed/dry-van hybrid trailer with the floor and wall strength capable of supporting oversized loads?

Electrolux and Nussbaum wanted a trailer that could tie together two transport types, moving strapped-down raw steel inbound from suppliers, then cubing out finished-good appliances bound for distributors. While Wabash had tinkered with heavy-duty equipment before, it had never considered a box with a floor rating 50 percent higher than existing equipment.

"You can't haul steel coils in a conventional van trailer," says Ehrlich. "So we considered how to create a trailer that could."

Nussbaum and Electrolux then discussed the feasibility, practicality, and potential cost of developing the equipment.

"All Nussbaum wanted from us was buy-in that we'd use it," says Spangler. "The trucking company assumed the risk and ran with the idea."

With Electrolux demonstrating a need and Nussbaum proposing an idea, Wabash became the solution integrator.

THE COMPONENTS

COMPANIES: Appliance manufacturer **Electrolux**; carrier **Nussbaum Trucking**; trailer manufacturer **Wabash National**

CHALLENGES: Fluctuating inbound flatbed trailer pricing and capacity; heavy, oversized raw materials; inefficient one-way moves.

GOAL: Reduce the impact of one-way inbound moves on transport costs by repurposing assets for outbound hauls.

APPROACH: Blend inbound and outbound assets by creating a fully enclosed standard-sized flatbed/dry-van hybrid trailer capable of hauling inbound raw steel and outbound finished goods.

RESULT: Eliminated deadheads; created more efficient loading and unloading processes; cost savings.

Ehrlich and his team of engineers approached the problem by running through a series of causes and effects.

"Trailers and floor systems are like links in a chain, with different parts supporting one another," he says. "I considered the different design components, their impact on each other, and potential problems."

What Nussbaum and Wabash contrived to do bent convention. A standard trailer floor system today supports 16,000 pounds, with high-end, heavy-duty trailers topping out at 24,000 pounds. Ehrlich determined that the trailer Electrolux needed would require a 35,000-pound floor rating—an increase of more than 50 percent over a standard heavy-duty unit.

Wabash calculated its options, then its development costs. "Nussbaum wasn't going to place an order for trailers that might not work—nor were we willing to invest in the development if we knew there wasn't a light at the end of the tunnel," Ehrlich recalls. "But I was confident we could pull it off, and told Nussbaum that if we didn't, they were under no obligation to buy."

X MARKS THE SWEET SPOT

Once they reached consensus that creating the trailer was possible, Wabash began working in conjunction with Nussbaum, Electrolux, and the appliance maker's engineering staff.

"Not only were our corporate representatives involved in the process, but also the St. Cloud warehouse supervisors and materials managers who physically unload the trailers," says Ehrlich. "Nussbaum also met with some of our steel suppliers to gather their input."

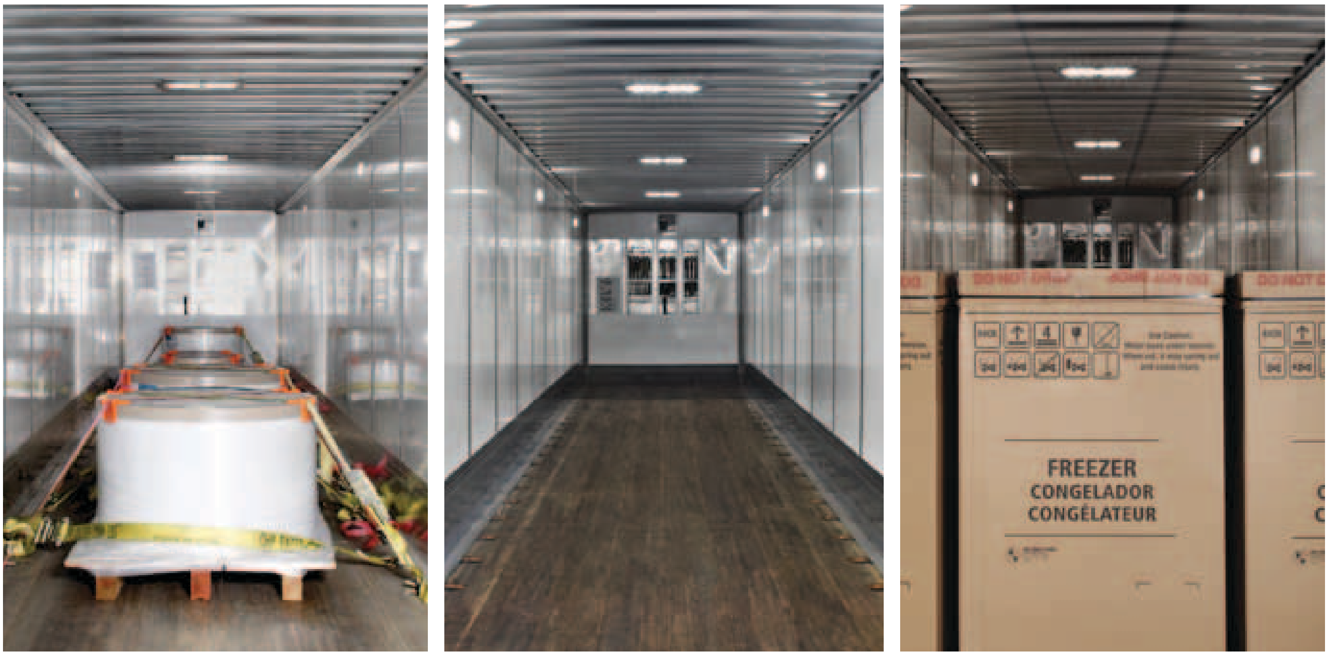
Given the effort's scope and the importance of safety, Wabash wanted complete backing from all parties involved.

"We brought Electrolux representatives in at the beginning of development and demonstrated how we were engineering the trailer to prove it was safe," says Ehrlich.

Once Wabash diligently worked through its development process and produced a prototype X-duty trailer—as it has come to be known—the next phase introduced comprehensive testing to ensure the equipment's safety. Because the trailer was unlike anything it had ever manufactured or certified, the company had to re-engineer its own test apparatus and expectations.

"We wanted to certify the equipment's safety with a floor-system rating, but the X-duty trailer was completely off the charts," Ehrlich explains. "So we created our own standards for it."

The steel coils, which weigh up to



The X-duty trailer carries heavy-duty raw steel coils to the Electrolux manufacturing plant; it is then unloaded, and refilled with finished goods for outbound haul.

16,000 pounds each, must be loaded in specific spots within the trailer. The X-duty presents a different loading and unloading environment than a typical flatbed trailer, using a 20,000-pound capacity forklift, for example, rather than overhead cranes. Specifications had to be uniform to ensure the trailer wasn't overloaded in the front or rear.

After "hitting a home run at first bat" with the prototype, as Ehrlich describes it, Wabash conducted three months of testing to ensure the trailer could withstand various loading conditions. The manufacturer brought a model into Electrolux's St. Cloud plant to demonstrate how it would work and solicit feedback. Along the way it made further modifications.

With the X-duty trailer perfected, the next step was inventing an internal system for securing the steel coils with restraints, as well as storing the rigging when not in use.

On a typical flatbed, a box under the trailer or on a rack holds straps and chains. Working with a third-party company, Nussbaum devised a case that fit into a hole in the trailer's nose. Rigging is housed on the outside, accessible from the interior, and Electrolux doesn't lose cube when loading finished goods for outbound transport.

PUTTING IT IN PRACTICE

After one year in development, Nussbaum and Electrolux put the X-duty trailer into action in 2010. Now there are 25 units in constant rotation between two suppliers, the manufacturer's St. Cloud plant, a distribution center (DC), and some customers that are in close proximity to the DC. Twelve drivers serve the dedicated loop.

Nussbaum's drivers generally pick up seven or eight loads of steel coils from vendors each day. Once inbound materials are unloaded at the manufacturing facility, trailers are then positioned for outbound finished goods deliveries.

The X-duty trailers have been a hit with Electrolux's staff. "Our loaders love the fact that they don't have to worry about rusted steel, and that they aren't out in harsh weather," says Spangler. "They work in a controlled environment."

When a truck comes into the St. Cloud plant, Electrolux has drop trailers built into the loop. Its outbound transportation managers have visibility to inbound deliveries through its transportation management system. Trailers are pre-loaded, so when drivers pull up to the dock and unhook an inbound shipment of steel, they can immediately hitch up to a trailer laden with finished goods and move on.

In addition to eliminating one-way flatbed moves, which takes deadheads out of the market and more effectively uses existing capacity, and creating continuous moves, Electrolux developed a more efficient loading and unloading process.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> "Electrolux can load an X-duty trailer in half the time required to load a conventional trailer." – **Brent Nussbaum,** CEO, Nussbaum Trucking

Previously, suppliers loaded steel coils onto a flatbed, generally using overhead cranes. Then freight had to be strapped down, and often covered with tarps for transport, adding another manual labor element. With the X-duty trailer, however, loaders on forklifts can go directly into trailers to set coils down and pull them out.

"Loading traditional flatbeds, and pulling trailers into facilities to crane-load them, wasted time," says Nussbaum. "Electrolux can load an X-duty trailer in half the time required to load a conventional trailer."

Electrolux suppliers have a favorable opinion of the new trailer as well. "The steel company that we worked with initially on the X-duty was excited, and quickly bought into the idea because workers could load product faster," explains Spangler.

Both Nussbaum and Electrolux have big plans for the X-duty trailer. One heavy-machinery manufacturer has already expressed interest to Nussbaum in using the trailer for hauling raw materials and oversized equipment in an enclosed space.

Electrolux is similarly exploring opportunities to expand its use of the X-duty trailer. But there are measured constraints.

"Some facilities don't have the docks to unload this type of trailer, or docks are located in the wrong part of the building," explains Spangler. "That is a limiting factor. Based on where the manufacturing is and where the steel comes from, there may not be enough volume to justify a round trip. The X-duty trailer is moving all the time, so ideally it would be loaded going back."

The manufacturer is considering where it can incorporate this dedicated system within its transportation network – perhaps even siting and designing facilities and aligning its distribution network with the X-duty in mind.

Electrolux's Spangler also has to confront what can only be described as a welcome problem: enthusiasm for the X-duty from some very excited inbound logisticians.

"Our materials group is receiving undamaged steel in a controlled environment – and they want that all the time, as many trailers as they can get," he says. "But we have to consider the X-duty objectively, understanding that while it is well-suited to some situations, it doesn't work in others."

Moving forward, however, odds are Electrolux's materials group will get more of what they want.

Rolling Out a Safer Ride for Paper Stock

The X-duty trailer is a practical innovation with applications beyond moving steel coils and appliances. Trailer manufacturer Wabash National had the future in mind when it embraced Nussbaum Trucking's idea for a heavy-duty flatbed/dry-van hybrid trailer and decided to run with it.

"We recognized we could target different industries with this type of product," says Rod Ehrlich, chief technology officer, Wabash National. "It was a good investment, and not just amortized through Nussbaum's use."

The trailer manufacturer is considering high-density cargo where it can capitalize on its investment. Paper manufacturing is one such industry, largely because there have been a number of well-publicized mishaps in which shippers tried to move product on unsuitable equipment.

"Van trailers typically transport paper rolls vertically, and they're not secured very well," says Ehrlich. "If a paper roll falls over because it hasn't been properly secured, it takes the trailer with it. When stock is wider than the trailer is tall, you can't haul it."

Laying a paper roll lengthwise, with the eye horizontal, however, lowers its center of gravity. Wabash discovered through experimentation that the X-duty's floor system is suitable for this application.

Paper stock that has historically been shipped by rail can now move over the road with the X-duty trailer system. In addition, high-density, heavy equipment such as machining tools can also benefit from this type of hybrid equipment.

"The beauty of shipments in a van trailer is securement, damage reduction, and cost savings," Ehrlich says. "Flatbeds only go one way."


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INTEGRATION

Bucking Convention

Buck Knives' lean integration has allowed the company to sharpen efficiencies in its manufacturing operation, increase output, and pull back production from China.

Walk into Buck Knives' Post Falls, Idaho, manufacturing facility, and you immediately sense that it is not a typical corporate headquarters. The timber-framed entrance, cathedral-ceiling lobby, and interior walls decorated with mounted animals and rustic ephemera evoke a hunting lodge atmosphere.

The renowned knife manufacturer moved its only plant to Post Falls from San Diego in 2005 after a near-disastrous product line failure and soaring utility costs forced the company to rethink its business trajectory. A change in scenery to Idaho's verdant northern panhandle, which has favorable labor, utility, and regulatory allowances, proved an appropriate fit for the lifestyle to which Buck caters. That Idaho was once home to the family business served as added incentive.

Location aside, a more telling corporate transformation was already in the works. Along with honing a variety of pocket, folding, and fixed-blade knives, and other outdoor accessories, the manufacturer was integrating lean principles across the entire enterprise.

FINDING AN EDGE

By any standard, Buck's manufacturing process is labor-heavy and automation-light. Its prized products are celebrated not only for their "forever warranties," but also their detailed workmanship.

The century-old company cut its teeth under the leadership of founder Hoyt H. Buck, who made his mark producing handmade knives during World War II. Today the manufacturer is governed by his grandson, Chuck Buck, and the next in line, CEO CJ Buck. Like its leadership

legacy, the company's clientele is measured in generations, rather than years.

When the company faced cost pressures during the early 2000s, it followed the offshore manufacturing trend to reduce labor costs and remain relevant within the marketplace. Big-box retail customers such as Walmart and Cabelas were squeezing margins and demanding the same from their suppliers. Competition from other legacy knife brands such as Gerber, Kershaw, and Case was relentless.

The company's move to Post Falls contributed to more outsourcing as the new plant got up to speed training employees and managing internal administrative changes.

Buck's move to offshore production didn't go unnoticed. Loyal customers that had relied on American-made Buck products for generations weren't sold on buying imports. So the company made a U-turn in 2003 and began executing a plan to pull back its supply chain from China.

"Our old approach to manufacturing was focused on labor and fixed costs," says Phil Duckett, COO. "Most decisions to manufacture in China are based on those factors."

On the domestic front, Buck was batch-producing knives to reduce costs. But work-in-process inventory at various stages in the manufacturing process was building up. Production-to-demand was off the mark, materials were wasted, and excess stock had to be liquidated at year's end.

"The only thing forecasts guarantee is that they are wrong," says Duckett. "When you miss targets, you sit on inventory."

THE COMPONENTS

COMPANY: Knife manufacturer Buck Knives

CHALLENGES: Unbalanced production and demand; customer dissatisfaction with imported products.

GOAL: Eliminate materials waste; match production to demand.

APPROACH: Move manufacturing operations from China to Idaho; integrate lean principles across the enterprise; upgrade ERP.

RESULT: Consolidated production space; improved product quality; increased output.

A MODEL FOR SUCCESS

Buck rolled out its lean transformation while still in San Diego, bringing in consultants and sending out employees for training. The first step was transforming its mass production blueprint to an assembly cell model that facilitated flow.

Buck's move from San Diego to Post Falls introduced a smaller manufacturing footprint—from 180,000 square feet to 128,000 square feet—and a new platform to further increase efficiency and production latitude through lean principles. With the goal of insourcing more manufacturing, Buck also created a more flexible supply chain footprint that was responsive to actual demand signals rather than inventory forecasts.

The shop floor displays clear signs of Buck's lean integration. If signs like "Quality is Never an Accident" aren't a tell, the cell manufacturing layout surely is. The various stages of knife production are grouped together in an orderly flow. (*See sidebar, next page.*)

The logic behind Buck's cell layout is obvious at first glance, as the flow of materials feeds the manufacturing process. Various whiteboards around the facility share numbers and targets to benchmark performance.

But Buck is still a lean anomaly for a number of reasons. The company, by design, is known for craftsmanship. Its manufacturing process is driven by skilled labor rather than automation, which pointedly contradicts lean concepts of standardization.

Other variables are outlined in a 2008 *Lean Enterprise Institute* report:

- Buck's biggest customers are large chain retailers and catalogs, which can be highly demanding of suppliers and notoriously inconsistent with replenishment and sales forecast accuracy.
- Raw materials such as metals, animal bones, and antlers present variable sourcing cycles and costs.
- Nearly half the company's sales come in the last three months of the year—during hunting season and in the lead-up to the holidays—making for highly unlevel demand.

These obstacles aside, Buck does place a premium on quality and defect elimination, two principles of lean.

Batch production competed with the latter, while creating unnecessary waste and cost.

With lean principles now in place, Buck has consolidated space and increased output by creating a logical workflow through the entire manufacturing process.

On Oct. 29, 2010, Buck set a record when it produced its one-millionth knife for the year—with months to spare. Now that mark is a provisional milestone, and a new benchmark.

THE LONG AND SHORT OF LEAN

At its outsourcing height, Buck was splitting production evenly between Idaho and China. As of 2011, it is split 85 percent to 15 percent—and that ratio is expected to diverge even further as the company continues on its lean manufacturing path.

But Duckett is quick to clarify one point. “We’re not a lean manufacturer,” he says. “We’re a lean enterprise.”

From accounting practices that focus on value streams and workflows to working with customers to level order fulfillment, Buck has embraced the totality of lean. Much of the credit for this shift goes to Chuck Buck and the executives who bought into the idea, recognized its potential, and set in motion an aggressive plan to educate and train themselves and their employees.

As with any lean organization, a central tenet is continuous improvement. In concert with its Post Falls relocation and lean integration, Buck has also upgraded its technology architecture. After installing the *Microsoft Dynamics AX* enterprise resource planning (ERP) system in 2005, and upgrading it in 2010, the manufacturer partnered with Colorado Springs-based Accellos to integrate its *One Pinpoint EDI* for AX in 2011.

The Accellos solution brings uniformity to what had been a patchy EDI framework, while realizing the true potential of its ERP. In addition to simplifying data exchange with customers, the company is saving 30 percent on operational costs related to EDI.

Buck’s lean business approach makes expansion inevitable. The company currently sells to a mix of big-box retailers and specialty outdoors stores in the United States.

But the offshore market for Buck products is growing. China, for example, has become a big consumer as its middle class expands. International currently accounts for about 10 percent of Buck’s sales, and that number is likely to grow.

When Buck revolutionized the knife industry in 1964 by introducing the Model 110 Folding Hunter “lockblade,” it placed the company on the cutting edge of craftsmanship and innovation.

Now, nearly a half century later, Buck Knives enjoys a similar position as a lean practitioner.

Buck Knives’ Lean Workflow Gets to the Point

Creating a cell manufacturing layout at its Post Falls, Idaho, headquarters represented a key component of Buck Knives’ lean integration. The new process sharpened the flow of materials to top efficiency.

Fabrication begins when fine blank machines process lower-grade steel with specifically shaped dies at a rate of 1,000 units per hour. Buck sources raw metal from AK Steel in Ohio, and imports sanding steel from Sweden. A laser machine is used for higher-grade material, and scraps are melted down and recycled off-site.

Amid a potent chemical smell, double disc grinders then work blades to proper thickness, followed by stamp machines that add notches and other features. Every knife is imprinted with “Made in the USA,” the Buck brand, model number, and a unique year code.

In the heat treatment room, ovens slowly bake blades at 2,200 degrees F for 45 minutes. Then freezers chill product at -110 degrees F, before the blades go back to the ovens for another round of heat. The entire process takes 13 hours.

After further grinding to perfect thickness, blades take a welcome bath, swimming with soap, water, and stones. The rough tumbling process polishes knives before they move through more fine-grinding, where a row of big, green machines continue shaping, sharpening, and serrating different types of blades.

The final production stages assemble blades with handles made from paperboard cut-outs or other materials, such as wood and bone. Knives are hand-edged with Buck’s trademarked Edge2x technology, which pairs computerized testing and skilled training to ensure edge integrity.

Units are next hand-sharpened and tested in assembly-line fashion, then encased in clamshell packaging for distribution to retailers.

TIGER GRANTS: ROAD WORK AHEAD?

A third round of Transportation Investment Generating Economic Recovery (TIGER) stimulus, and arbitrary Department of Transportation distributions, demonstrate a long overdue need for U.S. freight transportation policy.

By Joseph O'Reilly

It's still too early to tell if the U.S. Department of Transportation's Transportation Investment Generating Economic Recovery (TIGER) earmarks have had a marked impact on the United States' economic well-being—the program's stated objective. But the DOT's recent announcement of 2011 grantees does prove one thing: its TIGER stripes haven't changed.

What has now become an annual mega-millions lottery for regional, state, and local jurisdictions across the country began almost three years ago with the American Recovery and Reinvestment Act of 2009 (ARRA). Title XII of the legislation appropriated money for supplementary discretionary grants "awarded on a competitive basis for capital investments in surface transportation projects that will have a significant impact on the nation, a metropolitan area, or a region."

TIGER's objective was to help finance "shovel-ready" projects that demonstrate substantial returns on investment—and do it transparently. To that end, the DOT has been very clear about its intentions.

Announcing a "sea change" at the 2010 National Bike Summit in Washington, D.C., U.S. Transportation Secretary Ray LaHood stated: "People across America who value bicycling should have a voice when it comes to transportation planning. This is the end of favoring motorized transportation at the expense of non-motorized.

"We are integrating the needs of bicyclists in federally funded road projects," La Hood continued. "We are discouraging transportation investments that negatively affect cyclists and pedestrians. And we are encouraging investments that go beyond the minimum requirements and provide facilities for bicyclists and pedestrians of all ages and abilities."

Over the course of the past three years and three separate rounds of TIGER distributions, there has been a clear skew toward public transit projects and Main Street makeovers that favor environmental sustainability and non-motorized accessibility. The context for this decision-making, given the DOT and Secretary LaHood's public posturing and prioritizing of "ped and pedal" provisions, leaves little doubt as to its objective.

In TIGER I and II, the DOT split approximately $2 billion between 93 unique projects. Of those grants, 45 were passenger-specific, 27 were dedicated to freight infrastructure, and 21 accounted for dual-use plans that served both passenger and freight interests, according to *Inbound Logistics'* research. (*See chart, page 132.*)

U.S. Transportation Secretary Ray LaHood supports federal funding for bicycle-centric transportation investments.

In terms of funding, passenger transit projects collected $940 million (47 percent) compared to $689 million (35 percent) for freight. The remaining 18 percent of capital was distributed for dual-use purposes.

To the DOT's credit, in its initial TIGER I outlay, $105 million was allocated to the Crescent Corridor Intermodal Freight Rail Project in Tennessee and Alabama, and $100 million to Illinois' CREATE Program. These two freight-specific efforts remain the only projects that surpassed the $100-million mark. But those are two exceptions.

Since TIGER I, freight transport spend has gradually declined, and the latest round of projects shows more of the same. Of the 46 grants totaling $511 million, 21 ($211 million) are passenger-specific, 11 ($134 million) focus on freight, and 14 ($167 million) are dual-purpose. Freight-specific grants received 26 percent of total capital, down nine percent compared to TIGER II.

FAVORABLE REACTIONS

While the imbalance in capital distributions is clear, reactions from various transportation authorities on both sides have been mostly positive.

The DOT's official press release announcing TIGER III winners recognized that of the 46 projects, "18 were devoted to freight or had a strong freight component accounting for more than $232 million of the total $511 distributed through the grant program." (Note: These figures do not match *IL's* research.)

The Rails-to-Trails Conservancy, a Washington, D.C., non-profit aimed at creating a nationwide network of pedestrian and bicycle trails from obsolete railroad grades, celebrated the

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The Heartland Corridor project received a TIGER grant to increase vertical clearances in 28 tunnels and remove 24 overhead obstructions to allow passage of double-stacked container trains between the Port of Virginia and Columbus, Ohio.

DOT's commitment to non-motorized infrastructure projects. Of the grants allocated, 22 incorporate some aspect of bike and pedestrian accessibility, and nine make cyclists or pedestrians the primary beneficiary, according to the Conservancy's calculation.

Compared to both TIGER I and TIGER II, where 15 projects provided requirements for bicycle and pedestrian access, respectively, according to *IL's* research, the third round of grants reveals a marked increase.

On the freight side, a statement issued by the Coalition for America's Gateways and Trade Corridors (CAGTC), a beltway lobby that supports intermodal transport and trade, similarly lauded the successes of five members that received TIGER funding. Its press release was titled "Freight Projects Compete Well in TIGER III."

While acknowledging some concerns, especially in terms of oversight, CAGTC Executive Director Leslie Blakey says TIGER is a step in the right direction.

"TIGER is the first instance where freight has been targeted. Until it came along, there was no funding for any type of transportation apart from projects of regional or national significance," she says. "So we consider it a positive that it has essentially become a permanent program and that freight has captured a great deal of money, especially in TIGER I, less so in TIGER II and III."

There's no discounting the accomplishment of TIGER recipients that have successfully competed for transportation funding, or even the DOT's accounting of what it believes to be an accurate assessment of capital distribution. These perspectives are entirely subjective.

There is an argument to be made, however, for whether or not TIGER monies are alleviating an obvious blight within the U.S. transportation system—a lack of freight infrastructure vision and policy—and whether the DOT is capable of making these decisions autonomously.

The DOT's TIGER grant evaluation criteria include four factors: jobs creation and economic stimulus; innovation and partnership; project-specific criteria; and long-term outcomes. In addition, the DOT acknowledges its own accountability with one notable bullet point: "Transparency of process: Program may be audited by Congress, the Government Accountability Office (GAO), the DOT Inspector General, or others."

To date, at least publicly and transparently, none of those options has been tested.

SPECIAL INTERESTS COMPETE WITH BEST INTERESTS

The DOT's perspective on transportation investment and development has been well-publicized. To a certain degree, its emphasis on sustainable transport solutions is laudable in a much larger world where anything goes. But the tenor of TIGER decisions and distributions thus far has been largely anti-utilitarian—for the benefit of the greater good.

In TIGER II, the DOT committed $127.2 million to 17 projects considered rural—though how it defines "rural" remains elusive. In this latest go-round, $146.6 million was allocated to 20 rural grantees. And, as another concession, TIGER grants were awarded to four Indian reservations.

Beyond that, the DOT's judgments demonstrate that mitigating inequities between rural and urban investment is more important than balancing freight and passenger transport needs—and that projects may not be evaluated on their individual merits, but rather within the framework of pre-determined conditions.

The DOT, for example, gifted $1 million to the far western native community of St. Michael's, Alaska, formerly a Russian trading post and currently a subsistence village, so it can improve four miles of local roads and enhance pedestrian accessibility over environmentally sensitive wetlands.

In fairness to the DOT, the total project cost is $8.6 million, so the federal contribution is a drop in the bucket, and the lowest of all TIGER III allocations. In fact, the majority of rural awards fall below the $10-million threshold.

Still, St. Michael's is a remote location with fewer than 400 inhabitants, and only served by air and water. There is no peripheral benefit. Investment is entirely localized.

In the context of the DOT's overarching evaluation criteria—job creation, economic stimulus, and long-term impact—it's hard to divine how this project meets those expectations.

On the other hand, the Prichard Intermodal Facility, sponsored by the West Virginia Ports Authority (WVPA),

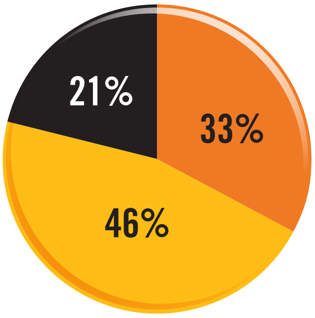
An Eye on the TIGER

Since the first round of TIGER stimulus was awarded in February 2010, the DOT has doled out more than $2 billion for transportation infrastructure improvement projects. While freight-specific projects pulled in approximately one-third of total capital outlay in the first two grant rollouts, respectively, that percentage dipped to 26 percent in TIGER III, according to *Inbound Logistics* research.

% of Total Grants

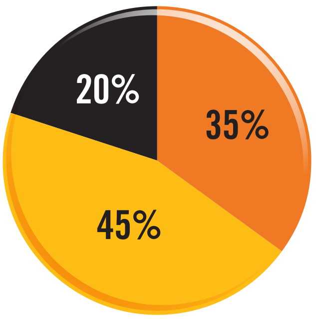
TIGER I: $1.5 billion, 51 grants

	FUNDS IN MILLIONS	# OF PROJECTS
FREIGHT	$494	13
PASSENGER	$692	25
DUAL USE	$312	13



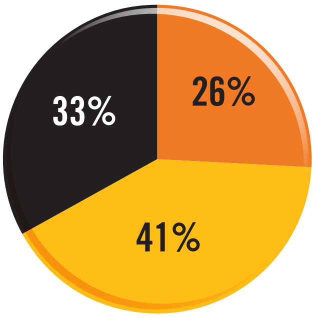
TIGER II: $557 million, 42 grants

	FUNDS IN MILLIONS	# OF PROJECTS
FREIGHT	$195	14
PASSENGER	$248	20
DUAL USE	$114	8

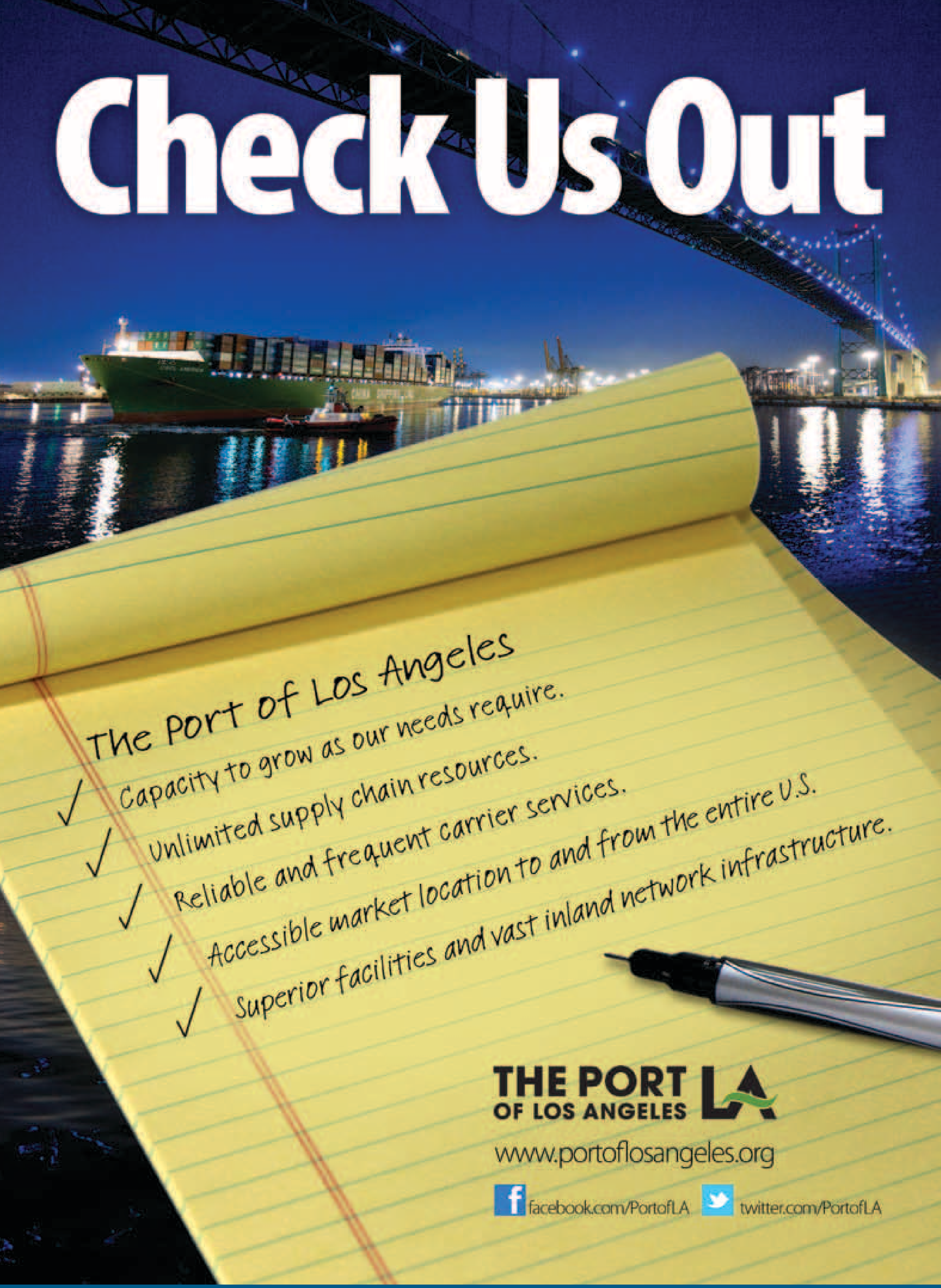


TIGER III: $511 million, 46 grants

	FUNDS IN MILLIONS	# OF PROJECTS
FREIGHT	$134	11
PASSENGER	$211	21
DUAL USE	$167	14



Source: U.S Department of Transportation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received $12 million in TIGER III stimulus. A model for rural projects that have sustaining economic development value, the WVPA intends to construct a new intermodal terminal along Norfolk Southern's Heartland Corridor, which runs from the Port of Hampton Roads, Va., to Columbus, Ohio. As a true stimulus, this allocation will benefit business interests in several states and contribute value in terms of facilitating global trade.

STYLE BEFORE SUBSTANCE

While it's easy to question the DOT's partiality toward rural grants, Blakey cautions against linking TIGER allocations to single-focused criterion—what part of the population gains most advantage.

"If we were strictly going by what benefits the most people, those selection criteria wouldn't be included," she says. "On the other hand, there are investments necessary to support communities that are contributing to foreign exports, notably agriculture—investments that bolster quality of life and encourage greater trade."

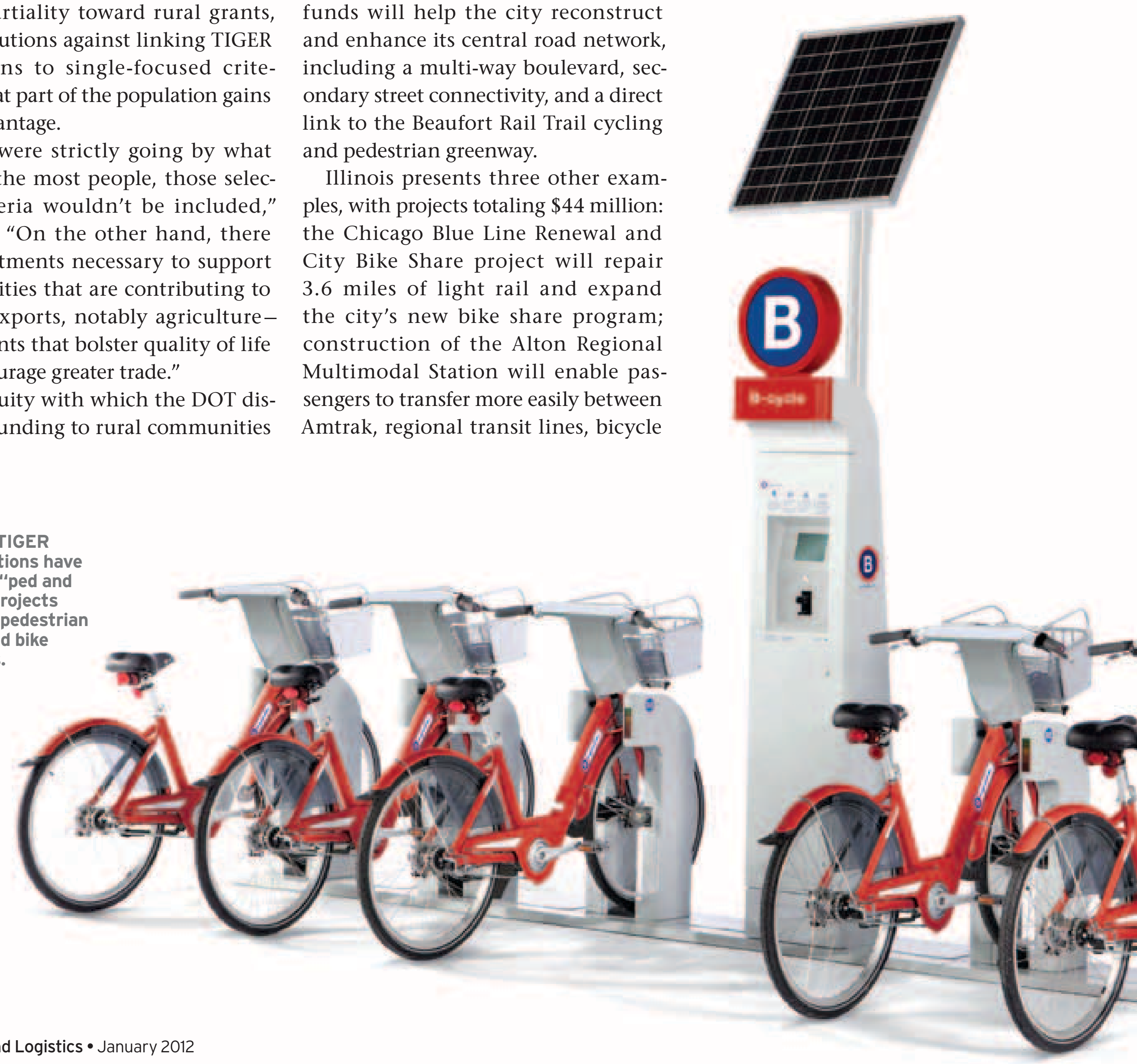
The equity with which the DOT distributes funding to rural communities is largely attributed to political lobbying in flyover states. Understanding the discrepancy between much-needed transportation infrastructure investments and cityscape improvements requires greater imagination.

A number of TIGER III awards include community facelifts that integrate public transit, commercial accessibility, and leisure infrastructure development.

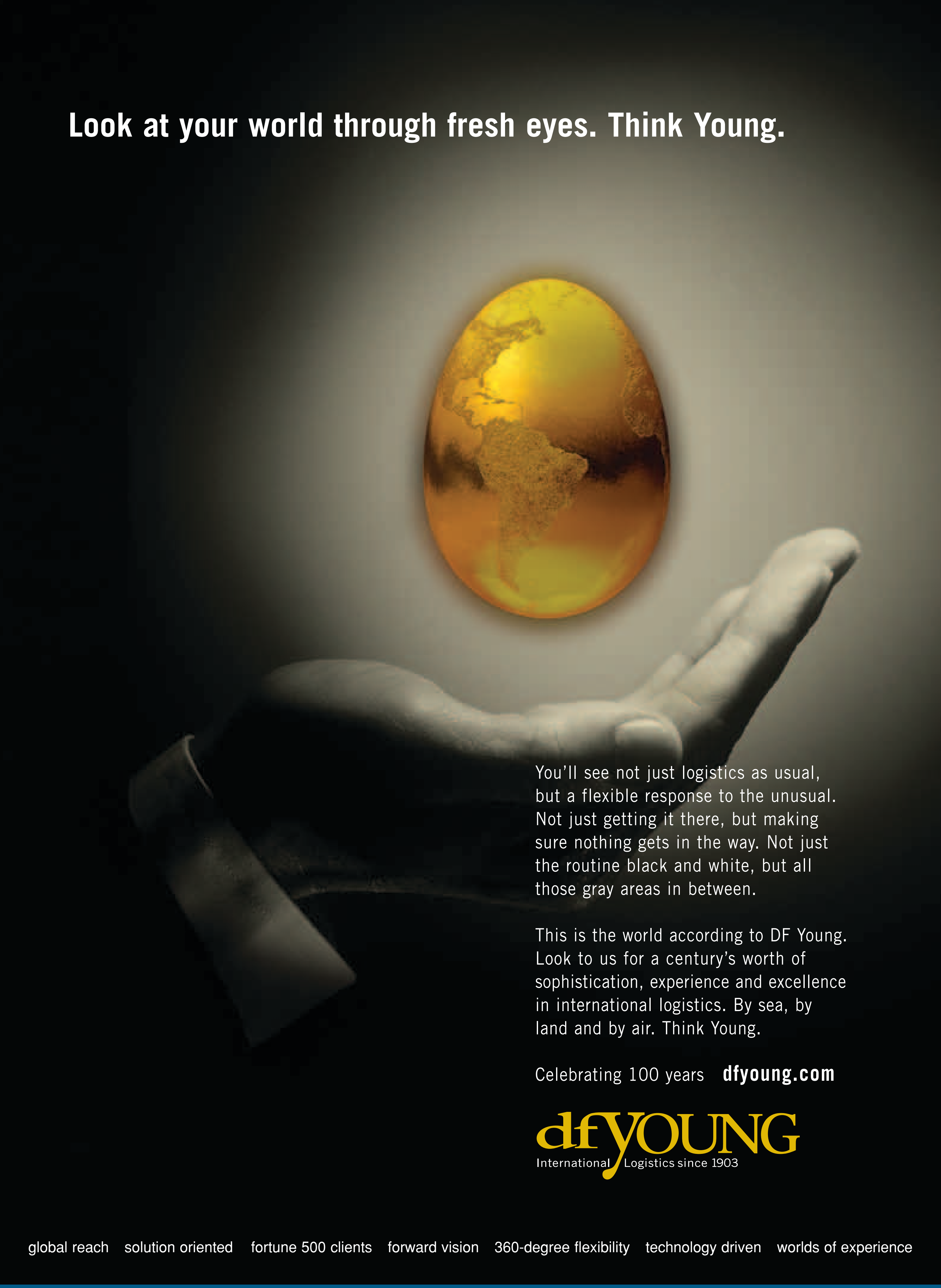
Beaufort, S.C., a not-so-remote city of 12,000 people, is another rural project that received $12.6 million for its Boundary Street Redevelopment. TIGER funds will help the city reconstruct and enhance its central road network, including a multi-way boulevard, secondary street connectivity, and a direct link to the Beaufort Rail Trail cycling and pedestrian greenway.

Illinois presents three other examples, with projects totaling $44 million: the Chicago Blue Line Renewal and City Bike Share project will repair 3.6 miles of light rail and expand the city's new bike share program; construction of the Alton Regional Multimodal Station will enable passengers to transfer more easily between Amtrak, regional transit lines, bicycle trails, and pedestrian facilities; and the Illinois Route 83 (147th Street) Reconstruction will rebuild two miles of roadway featuring on-street bicycle facilities, new sidewalks, and bus shelters.

By contrast, the Mid-America Intermodal Port District, a tri-state initiative to develop an inland port on the Mississippi River in Quincy, Ill., and serve the region's booming agriculture export trade, missed out on TIGER funding for the third time.



Recent TIGER distributions have favored "ped and pedal" projects such as pedestrian trails and bike stations.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The port has been in the works for a number of years and has already secured 13 acres of property for development. It's a perfect example of a multi-state project that needs stimulus.

There's no telling the thought process or cost-benefit analysis that went into denying Mid-America Port for a third time while earmarking $20 million for a downtown Chicago bike share program. Perhaps the port's plans were too nebulous or DOT officials deemed the funding requirements too great.

Blakey agrees that cross-state investments make the most sense because "they facilitate and make business more cost effective." Also with TIGER, multi-jurisdictional projects provide more bang for the buck given limited resources.

"In transportation dollars, TIGER isn't a lot of money," she says. "These allocations are relatively small compared to what we spend on transportation."

Blakey also believes the way TIGER is set up supports smaller, less commercial efforts. After initial grant successes, many got slicker with the way they presented their projects and received more money.

Other more needy freight infrastructure projects may simply be beyond the budgetary threshold for TIGER stimulus and therefore don't compete for funding. For example, the Port Authority of New York and New Jersey's Bayonne Bridge reconstruction effort–which will lift the span so New Panamax containerships can serve the port–may cost the equivalent of TIGER I, II, and III combined.

TIGER IV AND BEYOND

If nothing else, the DOT's TIGER program has raised the need for a national transportation policy by not adequately addressing freight investment. It's a roundabout way of getting to the root of a problem, but certainly not an uncommon approach in Washington.

Even when you go through the fine print of ARRA's various transportation subsets and funding allocations, including the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), Federal Railroad Administration, and Federal Aviation Administration, there is little directive toward freight. The term "infrastructure" is used loosely.

The FTA has already doled out $8.8 billion as part of its own ARRA funding for public transit and light-rail development projects, including its New Starts, Transit Investments in Greenhouse Gas and Energy Reduction, and Tribal Transit programs. Some of these projects are competing for TIGER funding as well, which makes the imbalance between freight and passenger transport grants even more egregious.

More telling, the FHWA, which arguably has the greatest input on rebuilding critical over-the-road networks necessary to support interstate commerce and global trade, seems to have its signals crossed.

"These grants went to creative projects that represent the future of our diverse transportation system–everything from regional bicycle networks, to intermodal centers, to commuter rail, to safer highways," notes an official statement by FHWA Commissioner Victor Mendez regarding the initial TIGER I allocations.

Even his broader comments fail to mention cargo movement. For whatever reason, bicycles remain the party line for the DOT–but maybe not for long.

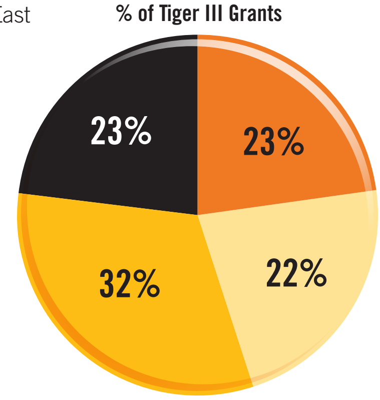
Blakey acknowledges rumblings in some Congressional circles about TIGER distributions and the DOT's carte blanche control over decision-making. U.S. Rep. John L. Mica (R-FL) publicly called out the department's "closed-door" evaluation process after Florida was shut out in TIGER I.

Mapping the Money: TIGER III

California, Pennsylvania, and Illinois led the way with three grants apiece in the DOT's TIGER III sweepstakes that awarded $511 million to 46 transportation projects in 33 states and Puerto Rico. From a regional perspective, the U.S. South pulled in the most funding, with 32 percent ($163 million) of the total pie. One bright spot for the shipping industry is that five of the 14 projects in the region are dedicated to freight-specific initiatives – likely a consequence of build-up in anticipation of the Panama Canal's expansion in 2014. At the other end of the spectrum, East Coast projects received 22 percent of the outlay.

U.S. REGION	FUNDS IN MILLIONS	# OF PROJECTS
CENTRAL	$119.1	11
EAST	$111.9	10
SOUTH	$163.3	14
WEST	$117.2	11

% of Tiger III Grants



Source: U.S. Department of Transportation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But Blakey contends TIGER serves as a good model for how a competitive grant program can work, provided some tweaks are made.

The CAGTC, GAO, and others have supported a more transparent process in which the DOT rates projects on a three-tiered scale and Congress then allocates money separately. This would build more oversight into the program.

"We've advocated that instead of it being an internal, 100-percent DOT approach, there needs to be shared responsibility—especially in the context of a mandate to develop a national goods movement plan," Blakey says.

PRIVATE SECTOR PERSPECTIVE

While the DOT and Congress have roles to play, there needs to be collaboration from the private sector as well to address the United States' future freight needs—especially because it's on the front line, and collects and controls much of the data necessary for understanding these needs.

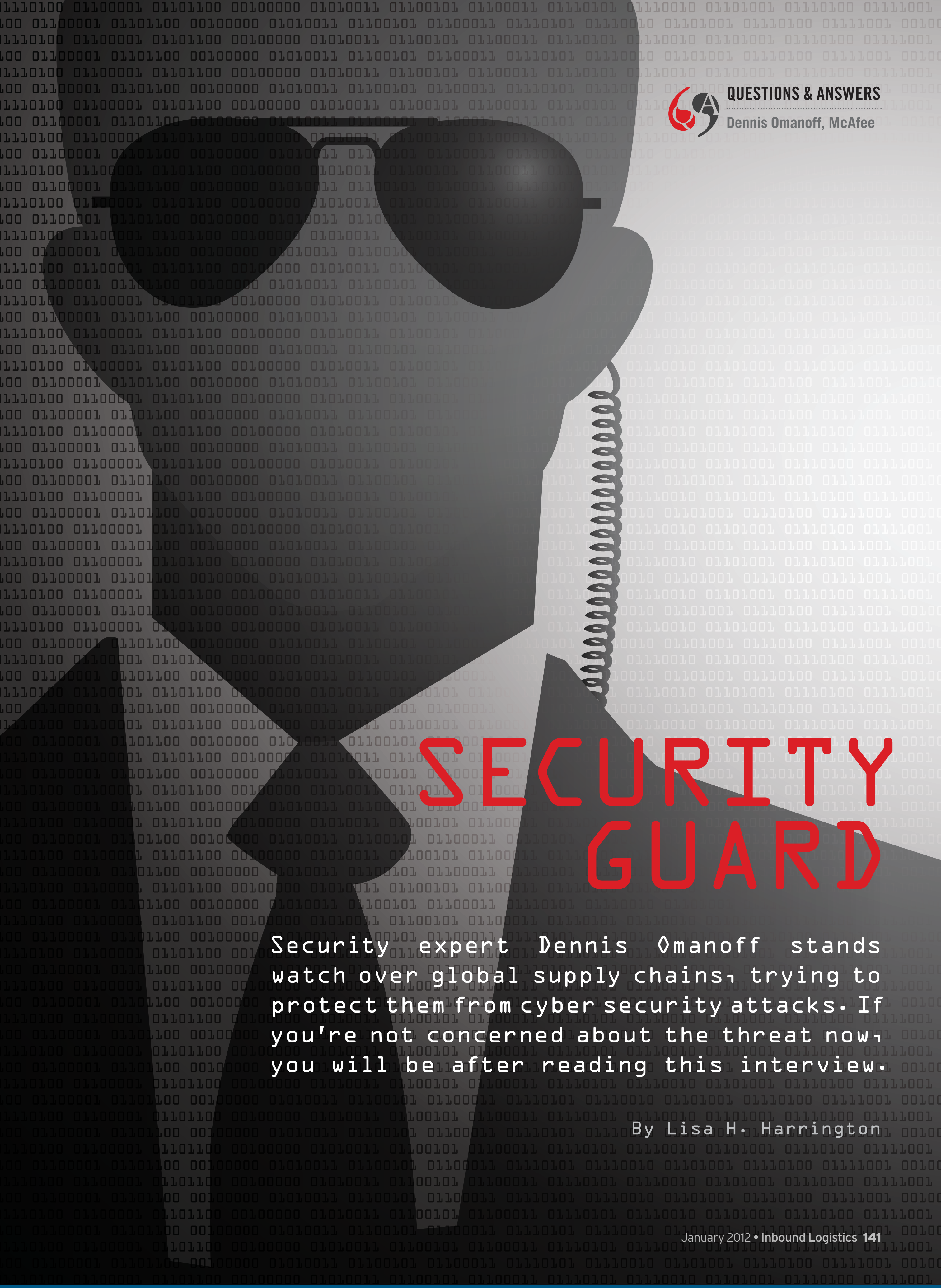
This is where public-private partnerships such as the CAGTC offer great value in aggregating input from various constituents and creating a unified front that can more easily communicate with public sector interests.

In November 2011, Congress authorized $500 million for a fourth TIGER dispersal in 2012. But there appears to be a different "C-change" shift in how grants will be appropriated. With regards to national infrastructure investment, Congress has made its instructions to the DOT very clear: "The conferees direct the Secretary to focus on road, transit, rail, and port projects."

Whether this strongly worded recommendation will curtail ped-pushing projects remains to be seen. But perhaps a more telling development is whether Congress or the GAO becomes more actively involved in decision-making, as the DOT's evaluation criteria allows.

Ongoing debate over TIGER funding may be an ideal entrée for public and private sectors to come together and work in unison toward a more sustainable long-term transportation vision. Until the government can execute a strategy for fitting various infrastructure assets and needs into a broader roadmap that embraces the United States as a whole – therefore creating a framework for how and where funding should be targeted – any investment is tantamount to throwing darts without a dartboard.

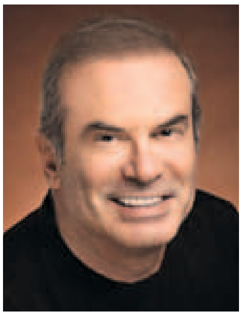
Currently, it's hit or miss. ■



SECURITY GUARD

Security expert Dennis Omanoff stands watch over global supply chains, trying to protect them from cyber security attacks. If you're not concerned about the threat now, you will be after reading this interview.

By Lisa H. Harrington



DENNIS OMANOFF is senior vice president, chief supply chain officer, chief procurement officer, corporate facilities and real estate, McAfee Inc. [Editor's note: Omanoff left McAfee in November 2011, following this interview, to join Seagate Technology as senior vice president, supply chain and procurement.]

When most people think of McAfee Inc., they think of security software. But many may not realize that McAfee's portfolio includes intrusion detection and prevention products that cost anywhere from 11 cents all the way up to the price of an E-class Mercedes.

Since its founding in 1987, Santa Clara, Calif.-based McAfee has grown into the world's largest dedicated security technology company. The statistics tell the story: Annual sales in excess of $2 billion; 125 million users, including 94 percent of Fortune 100 companies; more than 180 million mobile devices are shipped with McAfee; 120 countries make up McAfee's global footprint.

"McAfee creates innovative products that empower home users, businesses, the public sector, and service providers by enabling them to prove compliance with regulations, protect data, prevent disruptions, identify vulnerabilities, and continuously monitor and improve their security," according to the company's corporate profile. "McAfee is relentlessly focused on constantly finding new ways to keep our customers safe."

In February 2011, the company was acquired by Intel Corporation for more than $7 billion. Wall Street analysts were somewhat mystified by the acquisition, but to Dennis Omanoff, McAfee's senior vice president, chief supply chain officer, chief procurement officer, corporate facilities and real estate, it made perfect sense. With cyber security intrusions and threats rising exponentially for every aspect of technology—from silicon chips, smartphones, enterprise servers, and cloud computing to national defense and critical infrastructure grids—there's a pressing need to embed security at new levels, including in the chip itself.

As in every other product-based company, McAfee's supply chain supports the business by providing all the logistics activities required to deliver goods to customers. But McAfee's supply chain goes well beyond that traditional role, operating on a strategic level not typically found in many companies.

For his part, Omanoff brings 25 years of operations and quality control experience to his role. Prior to joining McAfee, he was vice president of operations and investor relations at Jetstream Communications, a telecom start-up. He has held executive-level positions at Advanced Fibre Communications, ForeSystems, StrataCom Communications (a Cisco company), and SynOptics Communications.

Additionally, Omanoff served on the board of directors for the California Center for Quality, Education, and Development, and was a Malcolm Baldrige National Quality Examiner, appointed by former U.S. Secretary of Commerce Ron Brown.

Omanoff holds a bachelor's degree from Fordham University and a master's degree in business from the Hofstra Graduate School of Business. He attended The Wharton School of the University of Pennsylvania for Corporate Governance, as well as the Stanford Graduate School of Business, and the School of Engineering for Global Competitiveness.

In early November 2011, Omanoff sat down with *Inbound Logistics* to share his views on supply chain management, security, and the U.S. business climate.

Q Supply chain management traditionally has been about getting the right product to the right place at the right time and cost. You have a broader view of the supply chain's role. Could you share it with us?

A I had an epiphany several years ago while attending a board of directors course at Wharton, along with many high-powered executives from Procter & Gamble, USAA, CSX, Texas


Everything
Smoother

Instruments, and large brokerage firms. I was a little intimidated.

Then I met the president of a circus company. "I had a real problem with my business," he told me. "Every time I pulled into a town, people complained about how I treated the animals. I had to change venues every night, which was very expensive. I also had to deal with the lion tamer, who wanted to be paid more than anyone else. And the clowns—they were wild."

So the president decided to re-define his business completely. He got rid of the animals, fired the circus stars, and booked only fixed venues. And we all know the result: Instead of charging $25 a ticket, his company—Cirque du Soleil—now fetches $200 a ticket, and is phenomenally successful. That's called Blue Ocean Strategy, and it's about not just beating your competition, but making it irrelevant.

I went back to McAfee and started considering how we could collaborate with customers more creatively to leverage how we go to market collectively.

For example, we outsource business process for copiers to Xerox. But we're a security company, so we can't have a copier's hard drive walking out the door with data on it when we turn in a machine. We looked at how we could work together not only to protect ourselves, but to build our business.

Our collaboration culminated in Xerox installing data loss protection on all its devices, giving them a competitive advantage and expanding our business into a new market. Now we are partners and sell our products through Xerox.

These kinds of strategic partnerships are much more exciting than a typical vendor-supplier relationship. They deliver better value to the customer, grow our company, and serve stockholders and employees.

The idea is to establish 360-degree relationships where we figure out how to do business on a strategic level with our suppliers. We look for ways to redefine our supplier relationships in terms of opportunity rather than just grinding them down on price.

To help achieve these goals, we study suppliers' customer, employee, and stockholder metrics. We also scrutinize leading and lagging indicators to determine where the company has excelled and where it has fallen short. Moreover, we benchmark ourselves against the "gold standard"—10 companies whose supply chain performances are recognized as top-notch. Benchmarks help us understand when good is good enough.

For instance, we benchmark profitability and operational efficiencies. But we have to look at these factors holistically. We can determine which supplier leads in inventory turns. But we also want to benchmark on-time delivery performance or performance against un-forecasted orders.

Optimizing one metric gains a tremendous advantage in that area, but not in another. The ideal is to strike a balance.

Q You've delivered several presentations warning of a new and potentially disastrous threat to global supply chains: cyber security attacks. Could you explain?

A Before Sept. 11, 2001, most supply chain professionals focused security measures on preventing the theft of valuable goods in their manufacturing and transportation operations. After Sept. 11, we focused on preventing weapons of mass destruction—or disruption—from being placed in cargo containers or other conveyances headed to the United States.

Today, there's a potentially more destructive – and often overlooked – danger to the supply chain community: cyber security threats. The volume and sophistication of cyber threats from totalitarian governments or nefarious individuals is increasing exponentially.

This 21st-century threat jeopardizes not only our information infrastructure, but the supply chain community, and at all levels of high-tech software and hardware products that connect with local or enterprise-wide networks, both hardwired and wireless.

Concerns about the "injection of viruses" into high-tech hardware products during their journey from manufacturing sources to customer delivery continue to grow. These concern are especially high with regard to government agencies. More than natural disasters, financial instability, or political upheavals, what keeps me up at night is the fear that bad guys are injecting into products bad stuff that can disrupt, bring down, or steal confidential information from networks.

In the past two years, persistent and highly organized cyber attacks such as Stuxnet, Aurora, Wikileaks, ShadyRAT and Night Dragon (*see chart, next page*) illustrate how cleverly the bad guys can worm their way into the world's most protected networks and either sabotage them, steal intellectual property, or compromise government trade or military secrets.

So the question is, how safe are our networked products—from software to computers to servers? How do we protect the integrity of our supply chains and the products they carry?

Q What's the answer to that question? How do we protect our supply chains and the products they carry from malicious cyber intrusions?

A About 18 months ago, I met with an undersecretary of defense for supply chain. (The U.S. Department of Defense is a McAfee customer.)

In supply chains, the undersecretary said, we are always concerned about doing things better, faster, and

cheaper. So we've outsourced to China. But that has created an unforeseen risk—one that is of grave concern to national security. Night Dragon and other cyber threats are examples of nation-states or totalitarian regimes aggressively seeking intellectual property and testing cyber terrorism and warfare.

China is neither safe nor secure as a production source, the undersecretary told me. There are no data loss or IP protection mechanisms – a situation that could subject product to inadvertent dangers. When you see a picture of our stealth bomber sitting in China, or learn that its ballistic missiles are based on our design, you have to wonder how that happened.

The undersecretary wanted McAfee's help. "First, I want you to obfuscate the supply chain so no one can figure out what is in a box being delivered to a defense agency," he said. "Second, I'd like a supply chain where the contingent labor is a group we can qualify. Third, I want my suppliers' CEOs to be willing to take a call from the Secretary of Defense in time of dire need. Finally, I want to establish a Trusted Source program."

During the past 18 months, McAfee has worked very hard to achieve these goals.

To obfuscate our supply chain, we architected a global operation based on late-stage postponement. Component parts are secured via distribution partners from multiple locations, then assembled, converted into finished products, and shipped by trusted sources. Any of our products can be made or assembled from any of our strategic locations in Europe, North America, or Asia, and shipped to any other locations, almost at a moment's notice.

The final assembly and hardware conversion—whether software, adaptor cards, or some type of interface card—and final shipment can be postponed until the last minute, and done very quickly. We aim for 20 minutes from the time an un-forecasted order comes in (lead time on predictable orders is 30 days). With this type of sense-and-respond network, we obfuscate the trail of quickly assembled final products so that it's nearly impossible to know beforehand what a product is and where it's headed—whether to an energy grid, nuclear power plant, or government agency. This helps protect our 'sensitive' customers.

Further, it's critical to keep inventory and backlog as low as possible. As the saying goes, "Inventory at rest is inventory at risk." Keeping inventory moving not only makes good financial sense, but also good security sense.

McAfee also required all suppliers to have an information security policy in place for data loss prevention and system control. Most of our suppliers agreed.

Making these changes in our supply chain was no small task. After all, we have 35,000 SKUs on our price book.

How did we do it? Take the example of a PC, which is comprised of a processor, a power supply, some physical packaging, a combination of flash memory, and some spinning media. We worked with our 16 product engineering teams to coalesce our products to use the fewest base items, then create 10 basic configurations, enabling us to make every product we offer out of 170 SKUs. Then we add the software load at the last minute.

Anatomy of a Hack: How the Night Dragon Attacks Work

Starting in November 2009, coordinated covert and targeted cyber attacks such as Night Dragon have been conducted against global oil, energy, and petrochemical companies. These attacks, which originate primarily in China, involve social engineering, spear-phishing attacks, exploiting Microsoft Windows operating systems vulnerabilities, Microsoft Active Directory compromises, and the use of remote administration tools. The goal is to target and harvest sensitive competitive proprietary operations and project-financing information concerning oil and gas field bids and operations.

1 Night Dragon
Global energy cyberattacks launched

2 Remote Command Execution
Extranet web servers compromised

3 Hacker Tools Uploaded to Servers
Gained access to sensitive internal desktops and servers

4 Further Access to Sensitive Documents
Accessed additional usernames and passwords

5 Disabled IE Proxy Settings
Enabled direct communication from infected machines to the Internet

6 Executives' Computers Compromised
Exfiltrated e-mail archives and other sensitive documents

By simplifying our product configuration to make late-stage postponement possible, we reap some big rewards. We turn inventory 55 times a year and our unshipped backlog is .2 percent. Usually, you can't achieve both high turns and low backlog at the same time.

By having a geographically dispersed supply chain, and trusted partners that can operate as a single unit, we can satisfy the unique requirements of customers in various regions. For example, "Assembled in the USA" verification helps meet stringent U.S. (and some European) government requirements. But similar in-nation rules and incentives are imposed in other parts of the world, necessitating a highly flexible and segmented supply chain.

These different security requirements can be met with what Dr. Hau Lee at Stanford University calls "multipolar, differentiated supply chains." In other words, complete regionalized supply chains working either independently or as a unified operation can meet localized and globalized customer demands while also creating an operation that protects products from being sabotaged by the latest cyber virus somewhere along the way.

Q Let's get back to supply chain management as a discipline. How would you characterize supply chain leadership today?

A Supply chain leadership is about being adaptive; it's not about continuous improvement. If I only focus on continuous improvement, I miss the breakthrough innovation.

Leaders also have to be able to work with different groups outside the supply chain, and have good customer relationship skills. They need to understand marketing, sales, and every other area of the company—and not just work in their silo.

What keeps me up at night is the fear that bad guys are injecting into products bad stuff that can disrupt, bring down, or steal confidential information from our networks.

They also need to focus on knowing what's important to employees. An engaged employee is 20 percent more productive. So the question becomes, 'How do I keep my people motivated?'

I focus on the same things Steve Jobs did at Apple: eliminating politics and bureaucracy, helping people deliver results, and rewarding high performance precociously.

Q Shifting to a larger issue, what's your view of the current state of the U.S. economy and its prognosis for the future?

A We lost our manufacturing base, and we need to get it back. The economy is in this state because we made a few big mistakes. One of them was outsourcing production overseas. That experiment has failed. Because of it, there are whole areas of technology development that no longer exist in the United States.

It makes me fighting mad that the United States is the only country in the world that doesn't offer a federal incentive package to locate a business here. If I locate a business in Russia, Ireland, Eastern Europe, Costa Rica—anywhere—I get a tax abatement. Countries offer a menu of incentives at the federal level. The United States only does that at the state, local, or possibly regional level.

India has double-digit attrition, double-digit inflation, and an awful power structure. In contrast, we have Class A factory space in Detroit sitting idle that we should offer for lease, with the first five years rent-free. When you factor in India's attrition rate—replacing 100 percent of employees every four years—the United States is less expensive.

Why not learn from countries such as Germany and make it economically appealing to build a business here? After all, BMW and Mercedes have some of the highest labor rates anywhere, yet Germany is a world net exporter of two great cars. Same thing in Japan. These companies benefit from federal business and tax incentives.

I say, make it a fair playing field on a global scale. The U.S. government should offer federal incentives to attract business. Whether it's the European Union, Russia, or South America, we need to match their business incentives at the federal, state, and municipal level. We need to use those incentives to bring production back to the United States. ■

SCRUTINIZING SUPPLY CHAIN SECURITY

New approaches, mandates, and technologies are key links in the quest for global supply chain security. Here's an inside look at what the logistics sector is doing to root out hidden threats.

By Amy Roach Partridge

In the decade that has passed since the terrorist attacks of Sept. 11, 2001, security has taken on an increasingly more significant role in the global supply chain. What was an afterthought to getting goods to the right place at the right time is now a crucial aspect of supply chain management around the globe. Manufacturing, transporting, and delivering goods safely and securely is as important—and as complex—as it has ever been. And in 2012, the focus on supply chain security will remain top of mind, experts predict.

Despite tremendous progress, very real threats to global supply chain security remain, says Walt Beadling, managing partner of The Cargo Security Alliance, a security organization that helps supply chains mitigate risk and optimize global cargo flow.

"The air transportation system has clearly been the mode of choice for terrorists, so air cargo specifically is a concern," says Beadling, citing Sept. 11; the so-called underwear bomber incident; and the parcel bombs that were sent from Yemen on UPS and FedEx planes in 2010.

Air cargo is vulnerable to a number of potential terrorist actions, Beadling explains. For example, a bomb placed in cargo carried on a passenger plane could lead to a mass-casualty event; while a stowaway in a cargo freighter could hijack the plane and use it as a weapon.

When it comes to ocean cargo, nuclear bombs, radioactive materials and explosives, weapons, or even terrorist operatives can be concealed in marine containers. These threats could cause mass casualties, severe material and infrastructure damage, and economic harm from subsequent port closures.

In addition to the actual threats, many factors make global supply chains complex and challenging to secure. The speed at which today's supply chains operate, for example, can be difficult to reconcile with security measures.

MANY CHALLENGES, MANY PLAYERS

"The supply chain often operates in a compressed time window, and that focus on speed can make it difficult to ensure workers are following security procedures, and not cutting corners," says Jim Percival, vice president of compliance at Damco, a global logistics and freight forwarding company.

"Any time someone rushes, processes can break down—whether it's a trucker who doesn't properly verify an original seal is on a container; vendors at origin not loading cargo as securely as possible; or an ocean carrier struggling to get all the containers on a vessel before it departs," he notes.

And, because supply chains today are often so long and fragmented, it can also be difficult to ensure security is treated with the same urgency by every party in the process.

"Goods are passed from provider to provider: a vendor books a container and gives it to a trucker, who delivers it to an ocean carrier," Percival explains. "Then the goods are put on a ship and discharged at a terminal, where they are released to a trucker or intermodal carrier, then delivered to an importer.

"Seven or eight touches can easily occur during transportation," he notes. "Everyone involved in that process must be diligent and take security seriously, while they are also rushing to deliver the goods on time."

GOVERNMENT FOCUS LOOMS LARGE

In addition, the United States has only limited control over how security processes and procedures are carried out in other countries. Given the global nature of most companies' supply chains today, this limitation carries inherent vulnerabilities and difficulties.

"Harmonizing global security practices and protocols around the world is a major challenge," Beadling notes.

That challenge—and its impact on business operations—is felt keenly by many supply chain players, including global air cargo carriers.

"Governments around the world maintain various security measures, which segments our processes and causes repetition throughout the supply chain," says James LoBello, Lufthansa Cargo's head of security for the Americas. "Assessing all the local regulatory requirements and examining each shipment to determine how best to fulfill security procedures are two of the most difficult challenges we face today."

Consider a shipment that originates in Asia, connects through a hub in

Europe, and is destined for the United States. "To be in compliance and properly secure that freight, we have to examine the government requirements of each country within Asia and the European Union, then layer those with the U.S. requirements," LoBello explains.

For Lufthansa, this increased focus on global security compliance has meant investing in technology, customer service, and "boots on the ground," LoBello says.

"We've had to dedicate additional technology and personnel resources—including more screeners and security personnel, and additional staff at the corporate level to interpret the laws and develop instructions for workers in the field," he notes.

"Also, we now host annual security conferences to bring regulatory changes and discussion points to center stage for our shippers, forwarders, and business partners," LoBello adds.

The good news is that governments around the globe are warming up to the idea of mutual recognition of supply chain security programs—bilateral understandings between two Customs

Ports Need Funding to Continue Fighting Threats

As the gateway for a large portion of global trade into the United States, ports play a crucial role in securing the supply chain. Today, they are challenged with reconciling economic realities with the ongoing fight against supply chain threats.

"Our biggest concern right now is funding," says Susan Monteverde, vice president of government relations for the American Association of Port Authorities (AAPA). That's because Congress has cut the Port Security Grant (PSG) program – which provides funding for maritime transportation infrastructure security activities – by 40 percent as a result of bundling PSG in with other homeland security programs.

"Since Sept. 11, Congress has allocated roughly $2.6 billion for the PSG program," she says. "We've been thankful for that, but we need that funding to continue." Roughly 75 percent of the PSG money is allocated for port security equipment, while the rest is spent on a mix of training and safety exercises, planning, technology, and operational needs.

Many security technologies and measures put in place at ports over the past 10 years are rapidly approaching the end of their shelf life. "The funds that were made available to us before seem to be ebbing," says Joe Lawless, chairman of the AAPA Security Committee. "Without continued funding, it will be a struggle to sustain port security improvements."

Despite funding concerns, ports are still making strides to boost security and safety in their facilities. Collaboration and information-sharing is a major component of their strategy. "We work closely with the Department of Homeland Security, the FBI, and the Coast Guard to stay informed," Lawless says. "The walls have come down among our agencies, and the real-time information we receive improves our decision-making."

TEAMED UP TO ADDRESS CHALLENGES

At the Port of Boston, Lawless conducts a weekly meeting to discuss security issues, developments, and initiatives. Port police, Massachusetts state police, Boston police, the FBI, Coast Guard Investigative Service, CBP, and area industry executives attend to review events from the previous week and prepare for upcoming security challenges.

U.S. ports will continue working together to fight for funding to ensure that security remains a top priority at all port facilities. "America's ports are part of our international borders and support more than 13 million jobs," Monteverde says. "Seaport security is critical for both national security and the economy."

Keeping ports staffed with properly trained personnel promotes national security.

administrations that indicate the security requirements or standards of each country are the same or similar.

The United States and the European Union, for example, recently agreed to mutual recognition of their respective voluntary supply chain security programs, U.S. Customs and Border Protection's (CBP) Customs-Trade Partnership Against Terrorism (C-TPAT), and the EU Authorized Economic Operator program.

Other countries will likely follow suit. "Governments are starting to realize that security is not a one-size-fits-all concept," LoBello notes. "As long as the supply chain is being secured, the approach and the regulations don't have to be exactly the same."

Not surprisingly, these types of government security programs, regulations, and mandates have been the primary driver of supply chain security initiatives around the globe.

CELEBRATING C-TPAT

In the United States, C-TPAT—which celebrates its 10-year anniversary in March 2012—has been the most influential initiative. The voluntary government-business program is aimed at building cooperative relationships to strengthen and improve overall supply chain security. It has helped bring shippers, the government, and supply chain service providers together in the name of security; and has increased the focus on security's importance throughout the entire supply chain.

Membership in C-TPAT has become a stamp of approval for supply chain service providers, says Howard Finkel, executive vice president, trade division for global ocean carrier COSCO Container Lines. "We work very closely with our shipper partners in C-TPAT who, like us, strive to make sure the supply chain is secure.

"Many major shippers demand that their carriers be C-TPAT-certified, and include clauses in their contracts that void agreements if a carrier loses its C-TPAT certification."

As a C-TPAT member, COSCO also works closely with CBP. The agency, for example, recently asked COSCO to trace a few sample shipments and provide a detailed analysis of the measures it took to secure them.

Cooperation among supply chain security partners – along with active data exchange, proper funding for security initiatives, and effective technologies – are all needed to secure the global supply chain.

"CBP wanted us to ensure every part of the supply chain was secure, so we started where the cargo was manufactured, and traced every step of the shipment from there," Finkel says. "It was a great exercise, and we decided to repeat it internally every month."

COSCO now picks two random shipments monthly and assigns its overseas offices to investigate each part of the move.

"We ask them to find out the manufacturer, trucking company, and warehouse involved, as well as gather information about the people who loaded the vessel, and the service providers' hiring procedures," Finkel says. "We're ensuring that every part of the supply chain we are involved in has security measures in place."

NEW MANDATES AND MEASURES

While C-TPAT has been largely responsible for kick-starting the global supply chain security dialog and initial actions, newer programs and mandates are also having an impact.

Under the Transportation Security Administration's (TSA) Certified Cargo Screening Program (CCSP), for example, 100 percent of air cargo carried outbound from the United States on passenger plans must now be screened at the piece level. (CCSP does not currently apply to air cargo coming into the United States on passenger planes, however. TSA recently pushed back its Dec. 31, 2011, deadline for 100-percent screening on U.S.-bound cargo, and had not set a new date as of press time.)

CCSP has been in effect since August 2010, and represents a supply chain-based approach to security that the industry has applauded. Because screening all air cargo at airports would cause extensive delays, CCSP enables freight forwarders and shippers to pre-screen cargo prior to arrival at the airport.

"Pushing security responsibility down the supply chain to shippers or intermediaries is an innovative idea," notes Beadling. "CCSP marks the first time a supply chain-security approach has been attempted from the top down across a complex trading community."

"Engaging forwarders and shippers to take on part of the security screening role and tender secure cargo to carriers helps alleviate bottlenecks at the airport," adds Lufthansa's LoBello. "This partnership approach within the supply chain seems to be the best model for security measures."

The TSA's ideal model is for shippers, forwarders, and air carriers to equally share responsibility for screening cargo, but carriers and freight forwarders have completed most of the screening requirements.

"Ultimately, the onus falls on the carrier to ensure everything is in order

(continued on page 160)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Physical Security: High-Tech or Old Reliable?

Two schools of thought govern securing cargo traveling by air or ocean transportation: attack the problem with technology, or go with a keep-it-simple approach.

Myriad screening technologies, devices, and radio frequency identification (RFID) initiatives have come and gone, with varying degrees of success. Currently, there is no silver-bullet technology that unfailingly protects shipments from theft or tampering, says Erik Hoffer, security consultant with CGM-NV, a manufacturer of cargo security products. Technologies such as RFID may be vulnerable to several problems.

"You cannot reliably get an RF signal out of a metal enclosure for any distance," Hoffer says. "Also, no dependable infrastructure exists to support RFID. And everyone operates on different frequencies.

"There are also issues of cost, responsibility for monitoring RFID tags and seals, battery life, device ownership and liability, and compromising factors, such as thieves reading the contents of an open RFID format device," he adds.

Georgia Tech Research Institute developed the Container Security Device to detect unauthorized opening or removal of marine container doors. The device was designed to withstand harsh shipping environments.

In addition, RFID is vulnerable to straightforward physical attack. "If a thief removes the device and simply leaves it where it is, the operating system will never report movement," he explains.

Hoffer also questions whether RFID tags have the durability to stand up to frequent handling within the shipping process.

"Add up all those factors and RFID is not a viable platform," he says. "A better approach would prevent theft mechanically through physical and visual deterrents, and enhance transportation security."

Hoffer recommends devices such as tamper-evident seals and tape that make it apparent if a container or box has been infiltrated.

"These products will keep a thief from getting into the container or box, but if a seal or tape is missing, torn, or voided when cargo arrives, it's an anomaly that is visually obvious," he explains. "This awareness keeps shippers from signing for goods that might be missing, tainted, or infiltrated with some sort of device."

SECURITY DEVICES OF THE FUTURE

For those who favor the high-tech approach, Georgia Tech Research Institute (GTRI), recently developed two promising cargo container security systems in concert with the Department of Homeland Security.

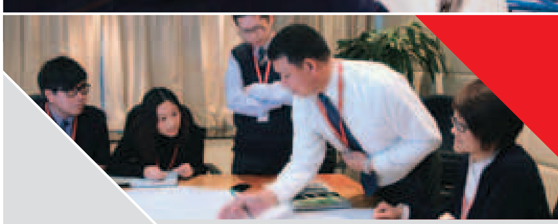
The Container Security Device (CSD) – a small, inexpensive system that detects unauthorized door opening or removal on ISO marine containers – and the Composite Container Security System, a lightweight sensor grid that will be incorporated within the walls, doors, and floors of a new type of hybrid composite shipping container being developed by the University of Maine.

"The CSD is designed so that if a container door is opened, it triggers an alarm that alerts authorities and informs them when and how long the door was opened," explains Gisele Bennett, director of GTRI's Electro-Optical Systems Laboratory. The product has been tested by Sandia National Labs, and performed successfully in several pilots in which containers were shipped from a factory in China to a distribution center in Georgia.

What makes CSD unique? "Many existing systems are easily defeated, and don't stand up well to harsh shipping environments," Bennett explains. "Our requirement for CSD is a high probability of detection and a low probability of false alarms."

GTRI has used the same high-detection/low-false alarm requirements for its Secure Hybrid Composite Container Security System. The system – which will be placed within hybrid composite containers – detects breaches in the container, and can detect a three-inch or larger hole. It will be used in concert with the CSD to report breaches to the outside world. Together, the two devices will provide useful information if a thief tries to either open or cut a hole in an ocean shipping container.

Ultimately, it will be up to the shipping industry to decide whether to embrace high-tech solutions like these or go the more traditional route.



(continued from page 156)

before it accepts and brings freight into its facilities—regardless of who completes the screening," LoBello notes. "We cross-check to ensure the CCSP process has been completed and the cargo is secure."

Shippers have not been as active in the program as the TSA expected—except in industries shipping sensitive, high-value goods, such as pharmaceuticals and fine art. For some smaller shippers, the screening responsibility, along with the investments and training required to meet the mandate, may simply be too onerous.

They may also be challenged to absorb the costs of screening. "When shippers price their products, they may not know there is a screening cost associated with transportation," notes Damco's Percival. "That expense can cut into their margins."

But complying with the TSA regulation has not been as difficult for carriers as many originally thought. While LoBello admits that Lufthansa "set aside considerable resources for the mandate" – including investments in extensive training and technology equipment at airports – the company was able to meet the mandate ahead of schedule. "The process is just business as usual now," he says.

Business as usual may soon include more of the risk-based programs that the industry believes are the best approach to air cargo security. CBP and TSA have joined forces to conduct pilots of a risk-based program called Air Cargo Advanced Screening (ACAS).

The program encourages cargo carriers to electronically provide shipment-level data for air cargo bound for the United States prior to loading the cargo at the last point of departure before it enters the United States.

Providing this information early enables TSA to target and inspect high-risk cargo at the point of departure.

"The ACAS initiative is promising because it advocates a risk-based approach, and promotes improved information sharing among trading partners and carriers," notes Beadling.

"Industry has promoted pre-vetting information and risk-categorizing cargo to apply measures at certain points within the supply chain, based on risk criteria," adds LoBello. "This approach will ensure we put our valuable resources in the right spot."

MAKING WAVES IN OCEAN CARGO SECURITY

This risk-based approach has worked well for ocean cargo security, in the form of CBP's Importer Security Filing (ISF) program, more commonly known as 10+2. Put into full effect in January 2010, the 10+2 initiative requires importers/exporters and ocean carriers to provide advanced trade data for all non-bulk ocean cargo shipments arriving into the United States. The ISF program has helped CBP identify high-risk shipments in order to prevent smuggling and ensure cargo safety and security.

"The fact that Customs now gets critical shipment data 24 hours before a vessel sails enables the agency to perform data-based research and decide what cargo to inspect on arrival, based on risk factors," Percival explains.

Ports around the country are offering their facilities to test advanced scanning, optics, and intelligent video technologies in hopes of discovering tools that increase security without creating transportation delays.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Like other post-Sept. 11 federal security regulations, complying with 10+2 created headaches for some ocean carriers and forwarders, but Percival believes the efforts are worth it.

"Completing all the IT mapping and programming necessary to adhere to the regulation requires considerable effort," he says. "Because so much of the data comes from vendors, we have to work closely with the global vendor community. Receiving shipment data earlier in the process is a tangible security enhancement, however."

Another high-profile ocean cargo security issue is the continuing battle over 100-percent scanning of U.S.-bound ocean containers. It has been an ongoing, divisive, and partisan issue in Congress since it was first proposed as part of the Sept. 11 Report Implementation Act. An original deadline for requiring overseas scanning of all containerized cargo coming into the United States was set for July 2012, but it has been pushed back to 2014.

While scanning every container may make sense for security purposes, supply chain players doubt the feasibility of that plan, and advocate a more risk-based approach.

Pilot programs have shown that 100-percent scanning is possible at smaller ports, but would cause extensive delays at busier port centers. "There isn't enough available land, real estate, or equipment to examine every container," says Percival.

Another aspect of the scanning debate centers on scanning and screening technology. Many argue that today's technology is not up to the 100-percent screening challenge.

"If we had to check every container with the technology available today, we'd bring trade to a screeching halt," says COSCO's Finkel.

USING TECHNOLOGY TO TACKLE SECURITY

Screening technologies seem to be improving, however. Technology companies are developing advanced techniques that are faster and offer more detailed data, notes Joseph Lawless, chairman of the AAPA Security Committee and director of maritime security for the Massachusetts Port Authority.

One Boston area company, for instance, has developed a scanning technology that breaks down every item in a cargo container and provides the makeup of the cargo within.

"The technology reports the exact components and elements of steel, for example, to differentiate between the different types," Lawless explains. "That's the granular detail level the technology will achieve when it is perfected.

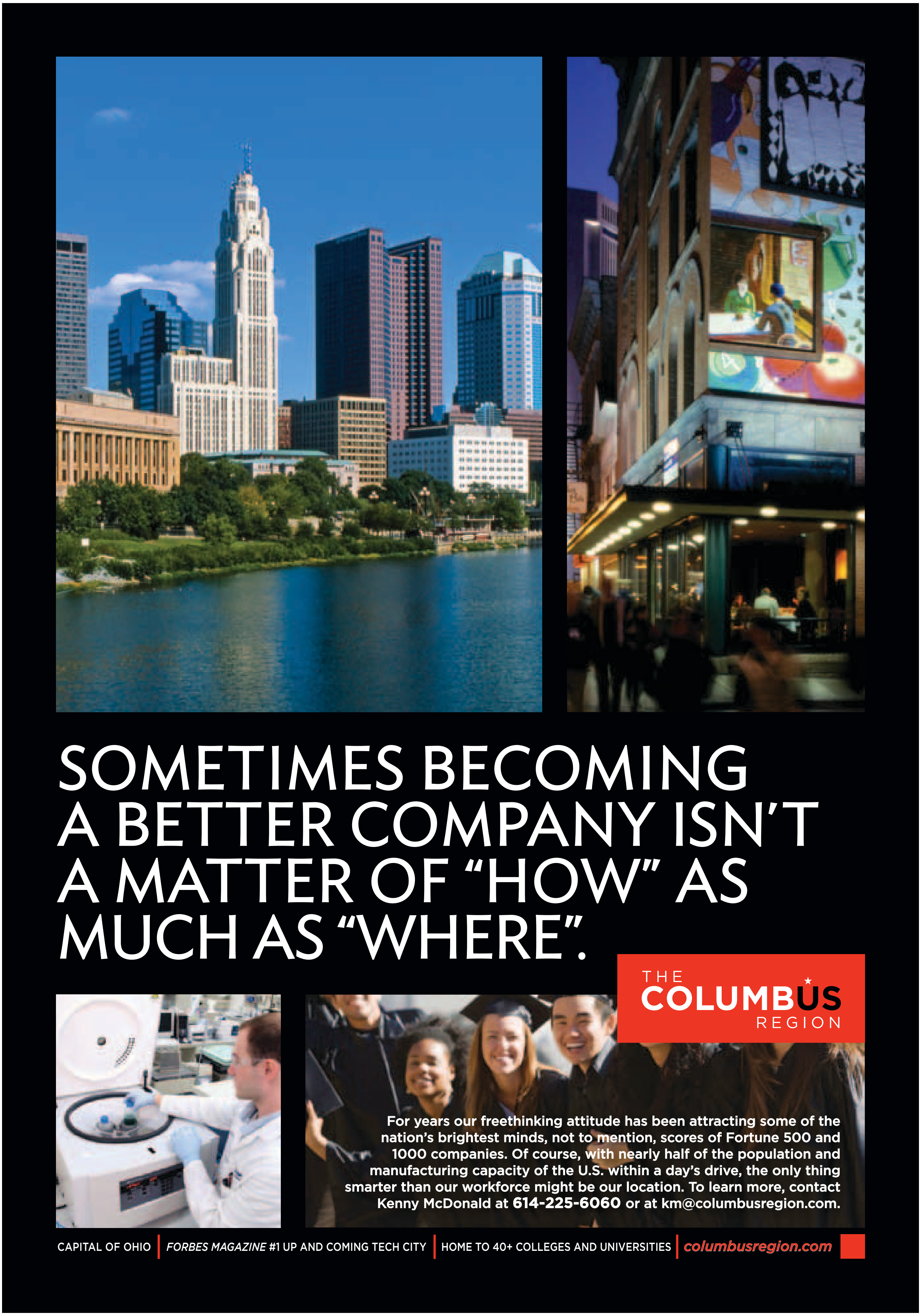
"This tool could become a game changer for screening, allowing security personnel to accurately identify a container's contents," he adds. "It could also help assess customs duties, and provide quality control for vendors and buyers."

Ports around the country are actively offering their facilities to test these types of advanced scanning technologies. "We are also looking at emerging optics and intelligent video technologies, and new advancements to improve nuclear, chemical, biological, and radiation detection," Lawless says.

"We must ensure these technologies don't delay processes, however," he adds. "U.S. ports want to facilitate commerce, and to do that, we need to have the best, fastest, most accurate screening and security technologies."

Ultimately, though, technology alone will not be the solution. Cooperation among the gamut of supply chain security partners—shippers, intermediaries, carriers, ports, and government agencies—along with the active exchange of crucial information, proper funding for security initiatives, and the development of effective technologies, are all needed to secure the global supply chain.

Carriers bear ultimate responsibility for ensuring shipment documentation is in order before accepting freight and transporting it to port facilities.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PURCHASING MANAGERS:

MINDING EVERYONE'S BUSINESS

As key players in the supply chain, purchasing managers have to think about innovation, growth, and cost-savings in all aspects of the company's business.

by Tamara Chapman

Purchasing managers once toiled away in relative obscurity, but today they occupy the hot seat. With so many business leaders looking to the supply chain to realize efficiencies and cost-savings, purchasing managers have emerged as key players in the corporate strategic game.

And as key players, purchasing managers need to make the entire business their business.

"The idea of sourcing or purchasing being an entity separate from the rest of the organization is flawed," says Chuck Franzetta, CEO of Franzetta & Associates Inc., a Pennsylvania-based consulting firm specializing in supply chain and logistics issues. "The purchasing manager's function is integral to everything a company does."

To perform effectively, purchasing managers must firmly grasp their company's marketing plan and its strategic goals. The best purchasing managers continually source new materials and products with innovation and growth in mind. If they're working for a manufacturer, they frequently recalibrate sourcing to ensure a fluid production plan and, ultimately, a steady flow of goods to the consumer. Just as importantly, they conserve the company's capital by timing purchases so that products don't languish needlessly in a warehouse.

"Good purchasing managers understand how and why quantity and price relate to carrying costs and logistics costs," Franzetta says.

MIRACLE WORKERS

So what miracles can an effective purchasing manager deliver?

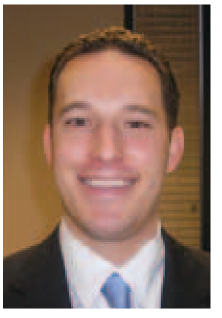
Franzetta cites one example drawn from his client list. The purchasing manager for a manufacturer of bottled luxury cosmetics reviewed the billings on bottle caps and noticed something peculiar. Up and down the production line, different unit managers were ordering bottle caps. Each was ordering a different-sized cap for a different-sized vessel. All these caps were then stored for significant periods. Couldn't the bottles be redesigned so that regardless of their capacity – one ounce, three ounces, or eight ounces – they all sported the same cap?

The purchasing manager found that they could. What's more, the new containers and single cap could be produced, delivered, and stored more efficiently. The purchasing manager had instigated a small, but significant, change.

That cost-saving idea did not begin with a purchasing manager married to a "we've always done it this way" mindset. Rather, it originated with someone brave enough to raise questions and act on conviction.

"Have the courage to step out of the norm and do something different," Franzetta urges purchasing managers eager to make a mark. "Ask yourself, 'Where is the next opportunity?'"

Meet two purchasing managers who enrich their organizations with innovation and efficiency:



KEITH ATTMAN

ALWAYS LOOKING FOR A BETTER WAY

AS A STUDENT AT THE UNIVERSITY OF Michigan, Keith Attman studied sociology, economics, and psychology. He puts those three disciplines to use as the purchasing manager for his family's business, Acme Paper and Supply.

Sociology provided insight into systems and processes, while economics offered an understanding of production, consumption, and everything in between. Meanwhile, his psychology background gives him a leg up when he's negotiating with a vendor or quizzing a sales rep about a new product line. Because he draws on many different disciplines to perform many different tasks, Attman loves his job.

Founded by Attman's grandfather, and in business since 1946, Acme Paper and Supply ranks as one of the Mid-Atlantic region's largest wholesale suppliers of disposable food-service packaging, janitorial and restaurant equipment, and retail and industrial packaging. To service its extensive client list – which includes major sports franchises, hospitals, and transportation companies – the business maintains a sizable infrastructure. It operates a warehouse/headquarters complex in Savage, Md., and a regional distribution center in Virginia, as well as a delivery fleet.

Attman started working at the company while in college. He tried his hand at various divisions and positions, but purchasing lured him with its varied challenges. Every day, he gets to ask the question that keeps him interested: "Could this be done a better way?"

Given the vast size and diversity of its operations, Acme affords plenty of opportunities for improvement. "You have to be amenable to changes, and you have to be able to make them," Attman says.

Although the various units have their own managers and buyers, Attman has to be well-acquainted with the many products Acme supplies – everything from toothpicks and toilet paper to walk-in freezers and shop vacuums.

Attman's day begins just as the previous day ends. Every evening, he prepares for the next morning by monitoring his e-mail for emerging issues and sending inquiries to suppliers,

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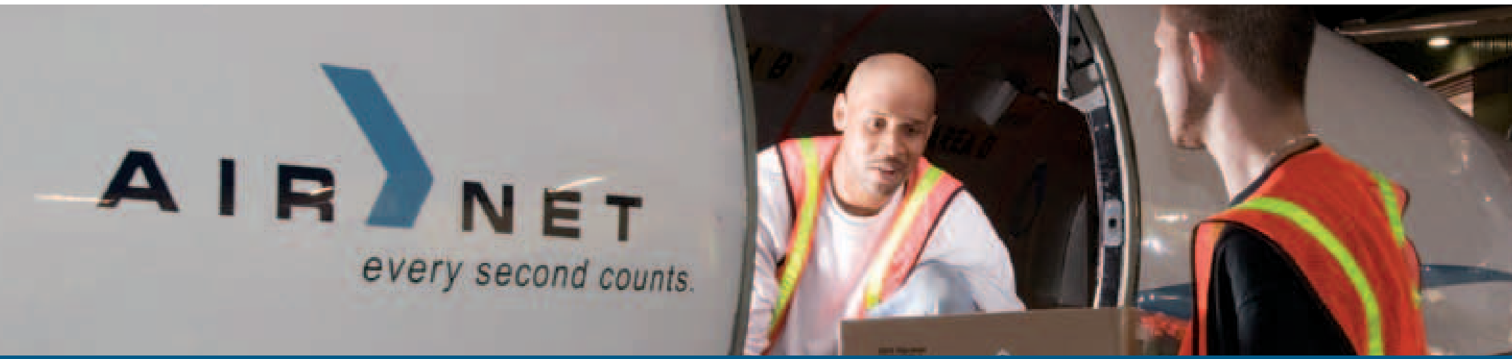


sales representatives, and anyone else who might be able to answer a pressing question. By acting at night, he ensures that his issues are at the top of the agenda the next morning.

At noon, he attends a daily meeting with the company's buyers and receiving manager. The team identifies potential problems – such as a missed delivery appointment – and takes whatever action is required to rebound.

Given the vast demands of Acme's client base, Attman spends a lot of time researching new products. When a client identifies a new need, he tries to source the products that will serve it. "My grandfather, who started this business, always said, 'Never turn down the sale.' If a need exists, we're going to meet it," Attman says.

SHADES OF GREEN

In recent years, Attman has devoted a lot of time to researching products with environmental benefits. "Our facility is in the federal government's backyard, so we hear a lot about green," he says. For example, a green initiative in the U.S. Capitol's cafeteria resulted in demand for compostable cutlery and containers. Other clients want cleaning products made from environmentally friendly compounds. To oblige, Attman has researched the possibilities and even consulted with manufacturers about developing new options.

"Green has become a huge part of our business," he says. "We pride ourselves on finding products that are unique to our industry and have a green spin.

"We have put together a hierarchy of shades of green," explaining that a light-green product on the scale might be recyclable, while a darker green would be compostable – "the ultimate green product," he notes. Before Acme will add a product to its inventory, Attman must scrutinize its green credentials. Not every assertion passes muster.

In analyzing data, Attman seeks to put company technology to better use. For example, he asked the IT staff to fine-tune stockout reports to afford him adequate notice of items in short supply. Prior reports typically sounded an alert, but it often came too late to avoid a shortage. Attman asked that the report be structured with a single question in mind: "Based on daily product demand, what will we run out of in five days?"

Once he had this data on hand, Attman found he could ensure timely delivery. "Getting the product one day sooner allows us to avoid stockouts," he explains, adding that such adjustments require ongoing analysis. "I have to continually refine our data."

Refining the data often means working closely with partners outside the firm. Attman cites one example that proved beneficial to both Acme and a long-standing vendor. When an analysis of comparative data showed that this vendor, a large paper manufacturer, was taking too long to fulfill orders, Attman asked to meet with the company's sales representative and logistics manager.

"It was taking the vendor eight days from the time we placed the order to deliver the product," he recalls. "We told them their competition was delivering better service." In fact, other suppliers were getting the same job done in five days.

Eager to preserve the relationship with the vendor, Attman worked with its sales and logistics staff to identify the cause of the delay and forge solutions. Upon learning that the slow delivery stemmed from a truck availability issue, they figured out a way to pre-book orders and shave three days off the process.

One of Attman's biggest challenges is "keeping my vendors honest on pricing," he notes. He makes it a habit to question every invoice, and he follows market news – monitoring prices on commodities, materials, energy, and transportation. He knows when the market justifies a cost increase, and if he doesn't believe a price hike is warranted, he calls the vendor to negotiate. Because Acme works with so many suppliers, and can quickly shift trade from one firm to another, Attman is able to leverage his purchasing dollars to the company's benefit.

"Being aggressive helps in this job," Attman says. "You have to be able to make quick decisions, multi-task, and, most importantly, listen."

For example, he builds relationships with his vendors and their sales teams to learn more about his competitors. Just by listening, he gleans a lot of information about the marketplace.

Learning from manufacturers also allows him to educate Acme's clients. "I always show new products to our clients, even if they won't buy them," he says. "They benefit from understanding the marketplace just as our company does."

With intelligence gathering, good vendor relationships, and attentive customer service in mind, Attman maintains an open-door policy at Acme. Communicating with clients and vendors helps him make decisions that position Acme for continued service and growth.

NANCY KOCUR

COLLABORATING TO OPTIMIZE OPPORTUNITIES

ON A TYPICAL WORKDAY, NANCY KOCUR, purchasing and logistics manager for Minnesota-based Buffalo Wild Wings Inc., arrives at the office just about the time the roosters stir.

A committed early bird, Kocur likes to stay at least one step and a few minutes ahead of the challenges associated with her demanding job. She's responsible for ensuring that the growing chain of sports-friendly eateries, which now operates 822 restaurants, never lacks an ingredient for success.

Increasingly, Kocur's job involves everything from optimizing the supply chain to sourcing and researching products. She negotiates prices, manages inventory, tastes and tests new menu items, supports the brand, and scrutinizes data with an eye toward slicing and dicing expenses while enhancing revenue opportunities.

"No two days are ever the same for a purchasing manager, but that's exactly what makes it such a fun and interesting profession," Kocur explains. "You can be a technical writer, negotiator, and inventory manager in the morning, then source a product, analyze spend data, and put together a freight program in the afternoon."

Kocur came to the company in 2008 with several years of experience as director of materials for a restaurant furniture manufacturer. That job demystified the supply chain for her and provided logistics expertise her new employer found attractive.

Kocur's initial logistics analysis got her thinking. "I believed there were opportunities to reduce landed costs through freight savings," she recalls, "but I didn't know how to go about realizing those savings."

She reached her solution by working closely with Buffalo Wild Wings' suppliers and their logistics teams. "Suppliers and supply chain professionals put a wealth of information at your disposal," she notes. "You can't be afraid to ask questions."

By tapping into such expertise and collaborating closely with vendors, Kocur was able to formulate a program that maximized parts of the supply chain. This resulted in lower landed costs to the restaurants, whether they operate in concentrated urban areas close to a major distribution center or in more remote locations far from the nearest hub.

Kocur also helps support Buffalo Wild Wings' product-development efforts. She sits on the company's menu-development team, and when a project leads to a new menu item, Kocur collaborates with suppliers to determine how much product to create to fill the system.

When reviewing potential suppliers, Kocur looks for companies with the production capabilities to meet Buffalo Wild Wings' demands. She insists on reliable distribution channels, research-and-development capabilities, and favorable pricing. "We also look for transparency and collaboration," she adds.

Kocur's move from furniture to perishables and limited-time offerings posed particular challenges. When sales exceed projections, working on replenishment can be time-consuming. And she faced a learning curve associated with the culture of a sports grill and bar. Before joining Buffalo Wild Wings, "I thought March Madness was a limited-time offering," she jokes.

One of Kocur's responsibilities involves monitoring compliance from restaurants within the chain, making sure they order Buffalo Wild Wings' signature French fry, its special sauces, and the many items that diners expect. Compliance, she tells restaurant managers, is all about consistency and protecting the brand.

"The items that we contract are tested, price-negotiated, and produced to align with our menu," she says, noting that diners expect to experience the same flavors from one venue to the next. Noncompliance can undermine the restaurant's bottom line.

And that bottom line, restaurant by restaurant, is Kocur's business. "We don't want any restaurant to sacrifice quality or lose margin," she says. ■

BEHIND THE BUZZ ABOUT FLEXIBLE AUTOMATION

Thanks to e-commerce, many distribution centers are now fulfilling a greater number of smaller orders—leaving some conventional materials handling automation systems behind the times. Is flexible automation the next frontier?

By Amy Roach Partridge

The explosion of e-commerce has profoundly impacted materials handling automation. Warehouses and fulfillment centers used to maintain a straightforward focus on shipping full pallets and larger units, but e-commerce created the need to ship goods at case, split-case, each, and even item levels. As a result, materials handling automation strategies and operations at many distribution centers (DCs) have undergone radical change.

Flexibility is the new materials handling buzzword. In order to more efficiently fulfill e-commerce orders, many retailers—and/or their third-party distribution or fulfillment center partners—are embracing a flexible approach to materials handling automation.

"Most traditional automation approaches are inflexible," explains Peter Blair, director of marketing for Kiva Systems, a warehouse automation technology provider based in North Reading, Mass.

"Companies design huge mechanical systems and invest significant capital to install automation solutions such as tilt-tray sorters and conveyor systems, which can't easily be scaled up or down," he says. "With this approach, a company has to project its growth over the next five to 10 years, and predict what products it will handle—then hope that strategy doesn't change much."

NEW SCHOOL vs. OLD SCHOOL

Typically, DCs begin operating these traditional automation solutions below capacity to allow room for growth, then hit peak operating capacity after a few years. But they can quickly exceed capacity limits.

In addition, many traditional automation approaches are specific to certain types of packaging and product, and companies can be caught short if they begin selling products they hadn't imagined they would when they originally built or designed their warehouse.

"An automation strategy designed for shoe boxes will handle shoe boxes productively and efficiently," Blair explains. "But if a company adds jewelry or high-end gowns to its product mix, the automation designed for shoe boxes won't work as well."

Thanks to Internet retailing, the trend toward offering more SKUs, and the need to diversify product lines to attract consumers in an uncertain economy, retailers are increasingly adding to and changing their product assortment.

"It is no longer accurate that 80 percent of sales come from 20 percent of SKUs," notes Bill Leber, director of business development and marketing for Swisslog Warehouse & Distribution Solutions, an automated storage and retrieval systems manufacturer with U.S. operations in Newport News, Va. "Today, growth for companies comes from embracing new concepts and categories; new customer segments; and a multi-channel experience."

"All these factors have initiated a different way of thinking about automation, and flexibility has become much more important than it was a few years ago," Blair adds.

ROBOTS TO THE RESCUE

This shift means that DC automation solutions must be equipped to effectively and efficiently handle e-commerce order patterns—typically a higher volume of orders, each with a small number of items.

"Automation systems built around pallets and large quantities – such as conveyor systems and forklifts – are unsuited to picking orders at an each or item level," Blair notes.

To achieve the desired materials handling automation flexibility, many companies are turning to mobile robotic systems such as the ones offered by Kiva and Swisslog, which contrast sharply with traditional warehouse picking models. Instead of

A typical robotic automation system such as AutoStore uses mobile robot units that move around the warehouse delivering products stored in movable bins to workstations.

warehouse workers going to find the product, the product comes to the workers. "The approach is totally different," Blair notes.

WORKERS STAY PUT, ROBOTS DELIVER ON DEMAND

A typical robotic automation system consists of mobile robot units toting moveable bins or shelves of products around the warehouse and to workstations. Workers at those stations remain fixed in place and can easily pick the items needed from each bin.

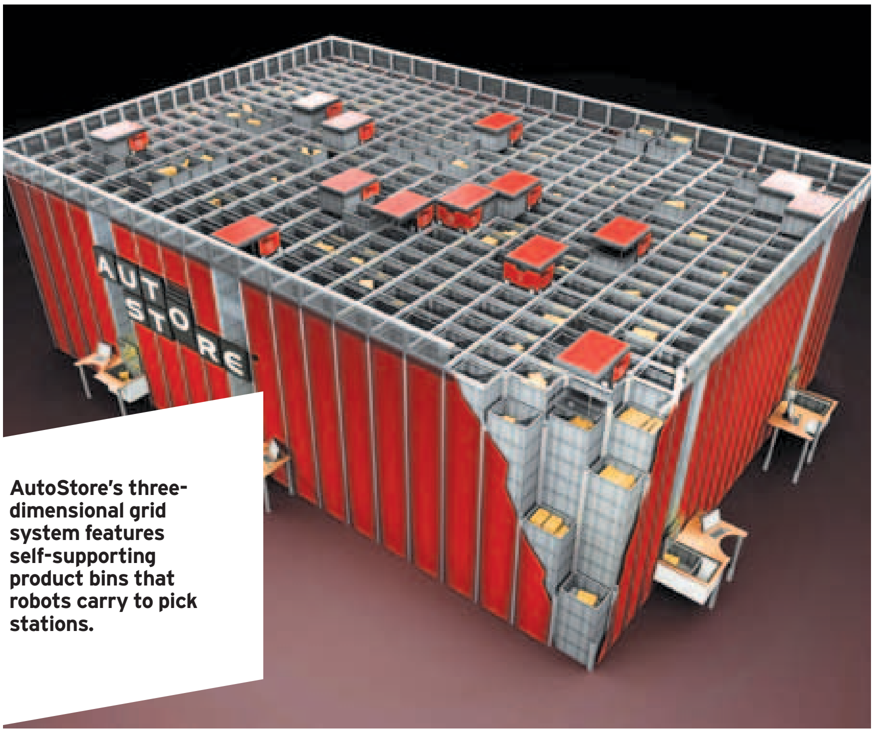
Once the necessary item has been picked, the robot moves on and the next one arrives. The solutions are controlled by high-tech software that interfaces with a company's warehouse management system or order management solution– or even a simple Excel spreadsheet–to give the robots instructions on what products to move, and to which locations.

Because robotic systems are flexible in design, size, and functionality, they are gaining favor over conventional manual and automated storage and pick systems for the small-quantity, multiple-SKU orders that are increasingly common in retail fulfillment.

In addition to handling e-commerce orders, the solutions are applicable for warehouses performing retail replenishment tasks, which are also largely piece-picking operations.

"Replenishment does not involve sending full cases to stores," Leber explains. "Instead, workers pick two of one product and three of another to replenish goods that have been sold. Robotic systems perform well in those scenarios."

The overall goal of robotic systems is to give distribution centers the flexibility and scalability required in today's brave new world of retail fulfillment. The following two case studies demonstrate how flexible robotic automation systems do just that.



AutoStore's three-dimensional grid system features self-supporting product bins that robots carry to pick stations.

CASE STUDY:
AUTOSTORE HELPS KOMPLETT COMPLETE ITS GROWTH

After a solid decade of rapid growth, Komplett–a leading Scandinavian e-tailer of PCs and electronic equipment to consumers and businesses in Norway, Sweden, and Denmark–realized it needed to automate its distribution operation. The manual, conventional fulfillment system it used at its 270,000-square-foot central DC in Sandefjord, Norway, was unable to keep up with orders from Komplett's nine e-commerce portals.

The company was also driven by the desire for greater efficiency and the need to maximize storage space in its existing facility to accommodate an increasing number of products and orders.

After considering a variety of automation options, Komplett decided to implement a robotic solution called AutoStore, manufactured by Jakob Hatteland Logistics AS in Norway.

"The AutoStore solution works well for companies such as Komplett that require both dense storage and highly efficient piece and small-case goods-to-person picking," explains Leber of Swisslog, the exclusive North American provider of the AutoStore system.

AutoStore's three-dimensional grid system features self-supporting bins that independently operating robots move to pick stations. All robots have two sets of wheels that enable them to move along perpendicular axes, and reach any position, and any bin on the grid.


THIS SIDE UP
TranSorb
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"The robots know their exact location on the grid at all times," Leber explains. "They count the distance up or down from their home station based on how many rows they pass. The picking station is at a certain grid location, so the software's traffic management system tells the robot the fastest way to travel from its home station to the product storage bin, then to the picking station."

A PLACE FOR EVERYTHING

Companies can determine the number of bins they want to install to meet current requirements, and can easily expand the grid in the future to accommodate growth and business changes—a feature that was key for Komplett, which went live with AutoStore in August 2007.

In its first phase, the company installed 16,000 bins, 26 robots, and 28 workstations; in 2008, it increased the size of its grid by more than 17,000 bins and 29 robots. Currently, it operates 33,000 bins, 55 robots, and 28 workstations at its Sandefjord facility.

"Workstations can be used for both putaway and picking," notes Pal Asbjorn Vindegg, Komplett's chief operating officer. "Typically, four to six stations are used for putaway, and the remaining stations for picking. But the actual number of stations we use depends on capacity demand."

ACCOMMODATING SHIFTING DEMAND AND LEAD TIMES

Being able to scale based on demand was an important factor for Komplett, which experiences both long-term seasonal demand variances, and changes in short-term daily demand.

In addition, Komplett's lead-time expectation from order to delivery ranges from two hours to two days, with 95 percent of its orders delivered within 24 hours.

"To cope with this lead-time variation and still deliver high productivity, we need flexibility to adjust capacity and man hours from month to month, week to week, and day to day," Vindegg explains.

Storage density is another key advantage that Komplett gained with AutoStore. "Komplett can store a large number of goods in a small space because the bin stacks are next to each other," notes Leber. "Because no travel aisle is needed, no space is left unused."

The solution also frees Komplett from needing room for lift trucks, roads, or ramps—a feature that is particularly attractive to European operators such as Komplett. Real estate there is so valuable that European companies don't typically build the million-square-foot DCs common in the United States.

POSITIONED FOR SUCCESS

Another benefit of AutoStore is the system's ability to automatically optimize where goods are stored in the grid by keeping frequently requested items higher up for faster access times.

Since embracing AutoStore's flexible automation, Komplett has been able to increase order volume, reduce labor hours, and improve productivity.

The DC operation's efficiency increased by 30 percent, as measured by comparing the number of orders delivered with the number of man hours.

"After service levels, this is the most important key performance indicator in our warehouse operation," Vindegg says.

With the AutoStore solution as the heart of its warehouse operation, Komplett has expanded its product base beyond electronics to include kitchen, home, garden, and health and beauty products. In 2010, the company prepared and shipped 1.4 million orders—nearly 4.3 million items.

That means Komplett picks a product every eight seconds, on average, and dispatches an order every 24 seconds around the clock, every day, all year long. Its flexible automated system allows it to keep up with this demand.

CASE STUDY:
QUIET LOGISTICS MAKES SOME NOISE WITH KIVA AUTOMATION

As a third-party logistics provider (3PL) for a number of prominent fashion and apparel clients—including high-end e-commerce purveyor Gilt Groupe and European fashion brand Zara—Andover, Mass.-based Quiet Logistics is challenged with providing order fulfillment, returns processing, and value-added services for a wide array of products.

To face that challenge in a way that not only satisfies customer requirements but also helps Quiet achieve its own business objectives, the company has embraced flexible automation.

Quiet Logistics was an early proponent of the robotic mobile fulfillment solution from North Reading, Mass.-based Kiva Systems, and has now installed the system in its two Massachusetts DCs, as well as in Louisville, Ky., where it operates a dedicated fulfillment facility for Gilt Groupe. Its most recent Kiva implementation—at its Devens, Mass., DC – went live in September 2011.

"Kiva's system provides automation that allows us to hit the fundamentals of e-commerce – getting the right product to the right place at the right time—faster and more accurately, without compromising the quality of our operation," says Al Dekin, senior vice president of sales, Quiet Logistics.

In addition, the solution gives Quiet Logistics the flexibility and scalability that

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"We need a solution that can scale quickly and provide capacity in real-time response to our clients' needs," Dekin says. "And because we serve multiple customers that all operate differently, it is crucial that we have flexibility to address unique customer requirements while using one common infrastructure."

BOTS AND PODS DO THE WORK

Kiva provides that common infrastructure in the form of orange mobile robot units (called bots, or drive units) that move inventory on shelving units (called pods) to and from workstations around the warehouse.

The robots are connected to a wireless network that provides instructions for their moves, while sensor-based stickers on the floor help the bots guide themselves and determine where they are in relation to other bots, the shelves, and physical impediments such as poles or columns. Quiet Logistics operates more than 150 Kiva bots and several thousand pods in its three facilities.

"The power behind this system is the software," explains Kiva's Peter Blair. "It dictates how the robots work and orchestrates movement on the floor at all times. It also enables the operators to efficiently manage and prioritize their daily order flow, and helps managers better allocate staff for optimal efficiency, given fluctuating workflows by shift, by day, and by season."

Kiva's software also implements easily with order management solutions. At Quiet Logistics' facilities, the software is hooked into the 3PL's proprietary fulfillment management system, which runs the whole warehouse.

"This integration allows us to talk directly to clients' systems and manage all service levels and operational requirements for different clients across a common infrastructure," Dekin notes.

In addition to Kiva's software, the highly customized nature of its workstations and shelving systems appealed to Quiet Logistics. Workstations can be configured for left-handed or right-handed workers, or for picking directly into a shipping carton versus picking to a tote or onto a pallet.

TAILORING A CUSTOM FIT

Shelves, too, come with myriad options. "Users can choose standard, square-footprint flat shelves to lay goods on," explains Blair. "Or they can configure more sophisticated units that contain multiple dividers for vertically slotted goods or mail-like slots for apparel that needs to lay flat. They can even use our garment-on-hanger (GOH) units, which are like moving closets."

Quiet Logistics worked closely with Kiva to design the GOH units, which meet the 3PL's need to fulfill orders from its many fashion customers. "It's common for the same apparel order to contain a GOH product and a flat-pack product such as a shirt or a pair

Kiva Systems' robots are connected to a wireless network that provides instructions for their moves, while stickers on the floor help the robots guide themselves.

of shoes. Merging those different items often poses a challenge," Dekin explains. "But with the Kiva setup, we are able to pick those orders using the common infrastructure, and just vary the type of shelving that the bots use to bring inventory to the pick stations."

PREMIUM PACKAGING

The ability to retain that common infrastructure while customizing portions of the process has also been beneficial to Quiet Logistics because of the higher-end packing processes that are its specialty. Because the company serves premium apparel brands, it provides numerous value-added packing services that help e-commerce orders reflect the brand's prestige.

"We are responsible for completing the Web site or brand experience for clients," Dekin says. "If online shoppers buy a $500 dress, they expect it to be delivered in packaging and in a condition relative to its value. The garments must be folded properly and packed beautifully in tissue paper, or placed neatly in garment bags with high-quality hangers—and the presentation of the package itself must be pristine.

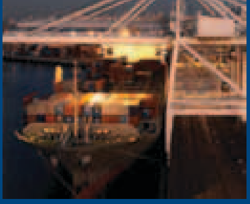
"We pick all the various order items through the Kiva solution, then distribute them to different packing stations to perform the value-add services for clients," he continues. "With that common infrastructure going to multiple packing stations, we can quickly and effectively support the needs of all our customers."

In addition, the solution is a fit because Quiet Logistics' customers maintain constantly changing inventory profiles. "We'll pack lots of shoes one month, then t-shirts after that, and mostly gowns the next month, so Kiva's flexibility is key," Dekin explains. "We don't have to worry about reslotting or reusing locations for products. If we sell through or pick all the units from one bin, we can reassign it to a different product that is coming in."

The company also doesn't have to worry about accuracy issues. The Kiva system makes the picking process simple and straightforward. It also minimizes the chances for human error, because the robots are responsible for bringing the appropriate inventory to the pickers.

"We have been pleased with the system's accuracy," Dekin says. "In fact, the only time we make a shipping error is if the manufacturer mislabels a product—which is outside our control."

What warehouse wouldn't want to be able to make that claim? ■



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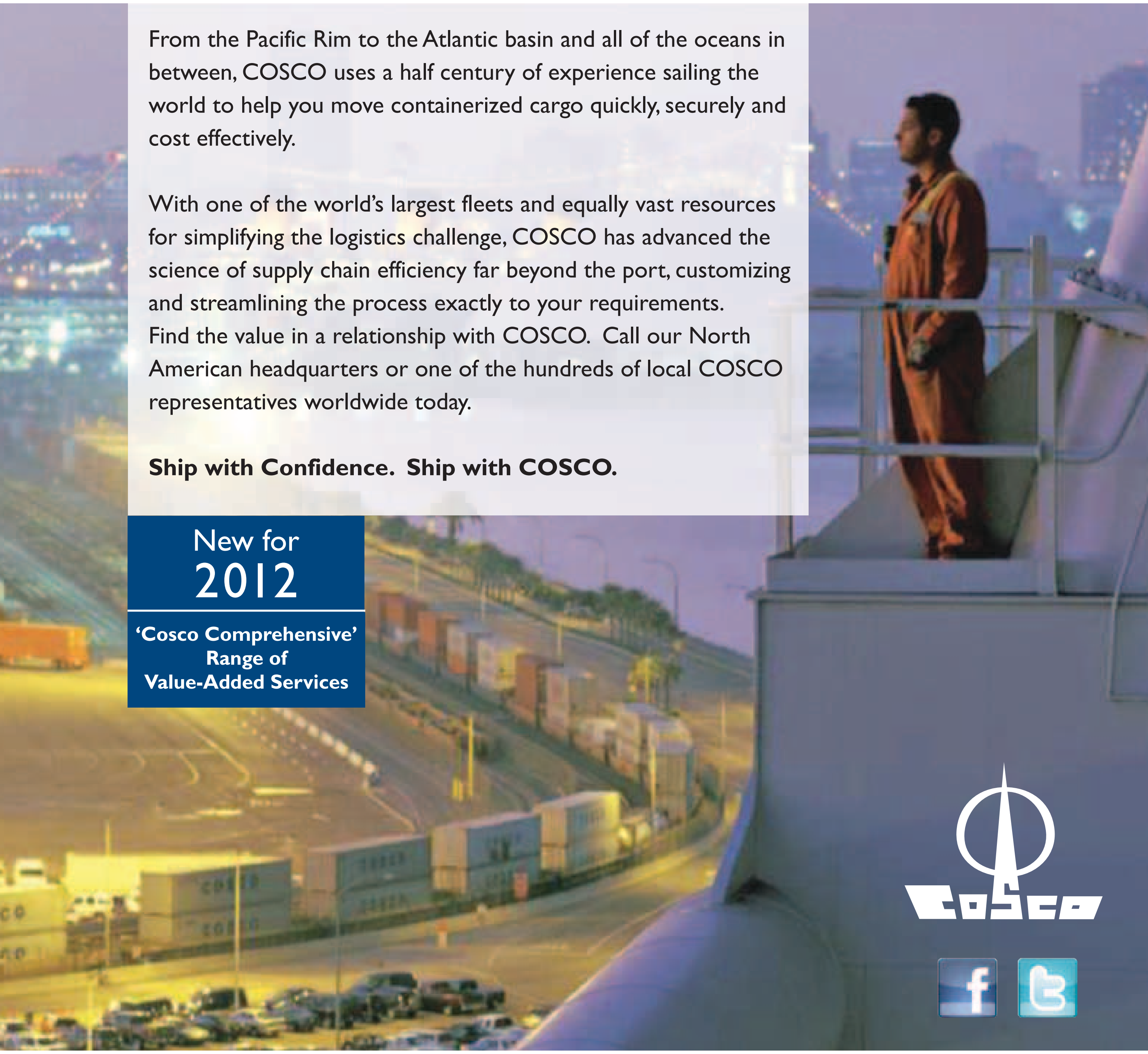

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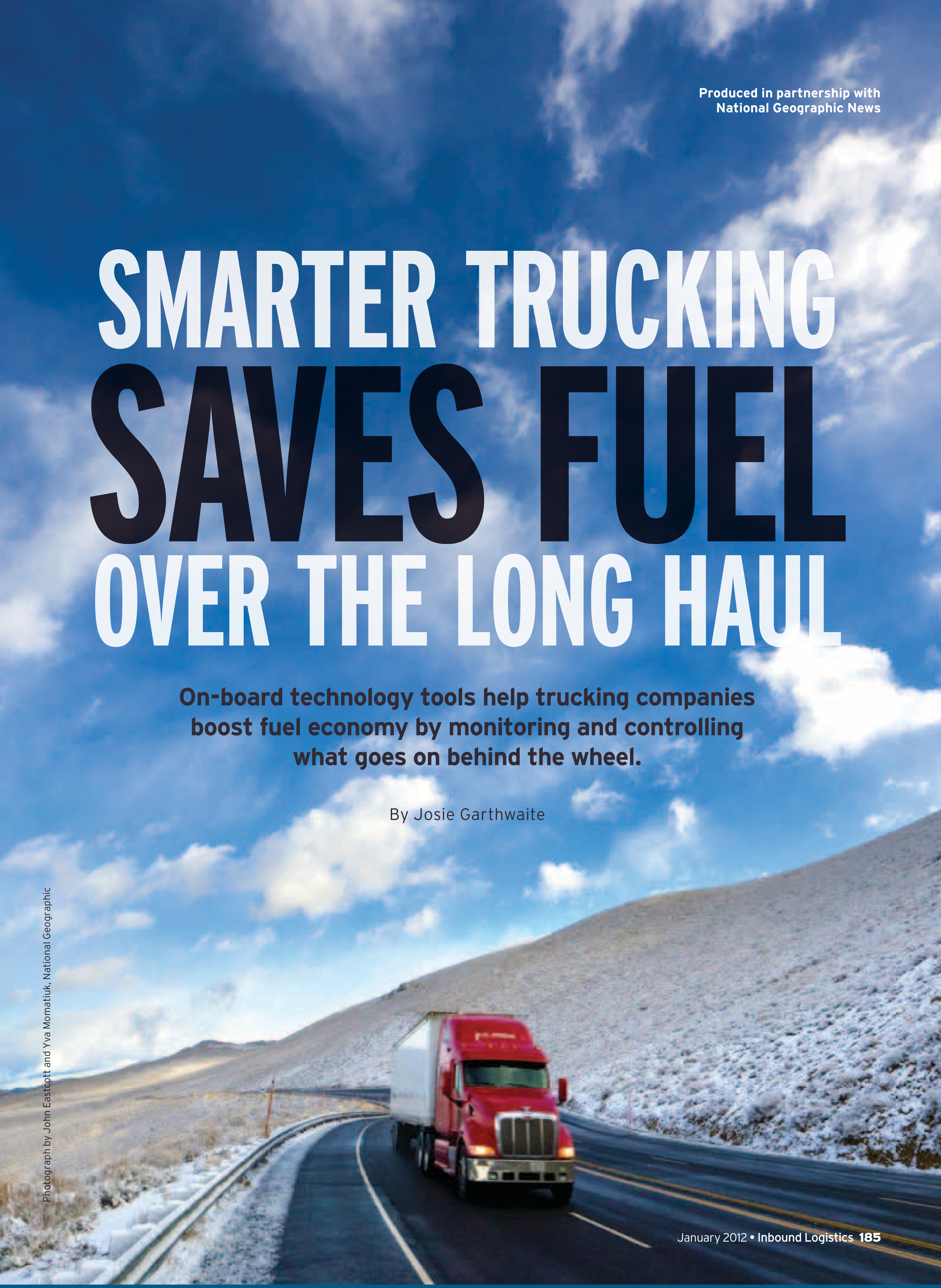


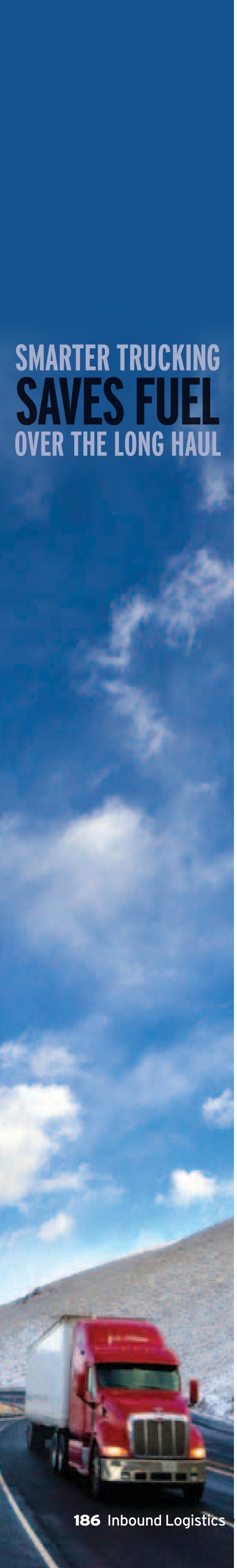
Produced in partnership with National Geographic News

SMARTER TRUCKING SAVES FUEL OVER THE LONG HAUL

On-board technology tools help trucking companies boost fuel economy by monitoring and controlling what goes on behind the wheel.

By Josie Garthwaite

Photograph by John Eastcott and Yva Momatiuk, National Geographic



SMARTER TRUCKING SAVES FUEL OVER THE LONG HAUL

More than 33 years ago, 33 truckers competed in a fuel economy contest dubbed the "Double Nickel Challenge." Named after radio slang for the 55-mile-per-hour (mph) speed limit then in force in the United States, the goal was simple: to test the claim – common among truckers at the time – that big rigs got better mileage at higher speeds.

Long-haul truckers from all over the United States gathered in East Liberty, Ohio, to watch as drivers navigated laps around a track, first at 55 mph, and then at any speed of their choosing. With a few exceptions, the trucks burned less fuel in the first, speed-limited trial.

More than three decades later, the double-nickel U.S. speed limit enacted in the wake of the 1973 Arab oil embargo has faded into history on most highways. But so has credibility for the claim that higher truck speeds beget better fuel economy.

In fact, road-speed governors – electronic engine controls that limit driver speed – are standard equipment on modern 18-wheelers. In Europe, all trucks have their road-speed governors set by the factory to a specified value determined by law. In the United States, vehicle owners decide the setting, but most large fleet operators electronically limit their drivers to between 60 and 63 mph, with some flexibility to accelerate when needed. Safety is one consideration, but the other aim is fuel cost savings.

Intelligent vehicle data systems could yield significant fuel economy improvements.

Yet both the trucking industry and policy makers are convinced that more can be done to curb the growing amount of fuel burned by big rigs hauling goods around the country.

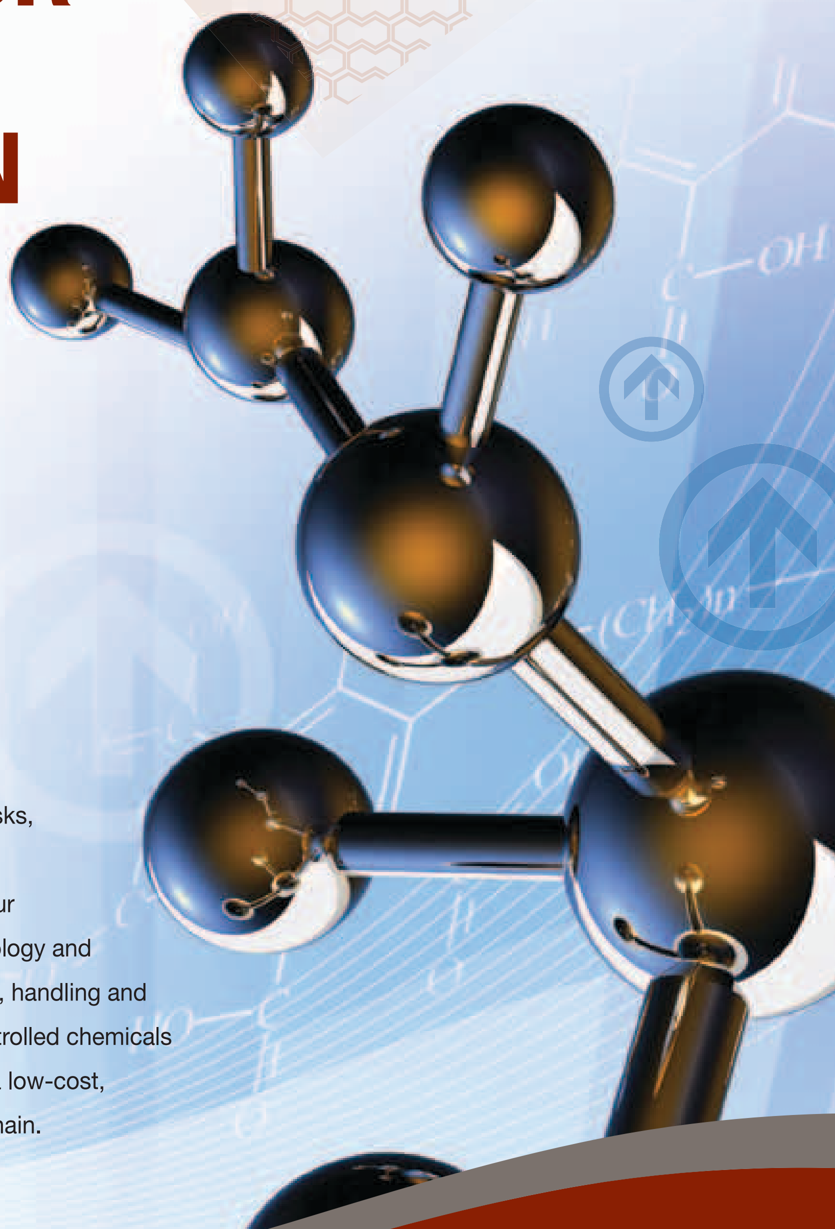
In August 2011, the U.S. government announced its first fuel economy standards for heavy-duty vehicles, with the goal of requiring big tractor-trailers to achieve 20 percent better mileage by 2018. Europe is also working on a framework for limiting trucking fuel consumption and carbon emissions. And Japan, where trucks are estimated to be responsible for 25 percent of automotive greenhouse gas emissions, set standards to improve trucking fuel performance in 2006.

Changes in truck aerodynamics, mass reduction, and improved rolling resistance are all strategies that could yield significant fuel economy improvements, according to a U.S. National Academy of Sciences (NAS) report issued in 2010. Perhaps even more valuable are "intelligent vehicle" systems, which can reduce the amount of fuel trucks burn by encouraging driver behavior changes that have long been known to save fuel.

GO SLOW TO SAVE DOUGH

Curbing driver speed is the most widely recognized behavioral change that can save fuel, with the 60 to 65 mph range the sweet spot for many 18-wheelers on today's highways, says Glen Kedzie, vice president of environmental affairs for the American Trucking Associations, a trade group headquartered in Arlington, Va.

On average, a truck traveling at 65 mph instead of 75 mph will experience up to 27-percent improvement in fuel consumption. "As a rule of thumb, for every one mile



per hour increase in speed, there is a corresponding 0.14 mile-per-gallon (mpg) fuel consumption penalty," says Kedzie.

Operating at even lower speeds (around the old double-nickel limit, for example) would further reduce aerodynamic drag and decrease fuel consumption, but safety risks increase if trucks travel much slower than cars. And the problem voiced by truckers during the days of the Double Nickel Challenge – that slower speeds translate to less income – remains today.

In the United States, Australia, Canada, and Europe, for example, Hours of Service regulations force truckers to rest after a certain number of hours on the road.

"With these restrictions, some trucks traveling at 55 mph may not be able to get their loads to their destinations on time," Kedzie explains.

Fortunately, the tool kit for eking out extra miles per gallon has expanded far beyond driving speed. In an era of more intelligent and connected vehicles, trucking technology for better fuel economy now includes wireless sensors, GPS chips, algorithms, and sophisticated real-time data analysis.

Fleet operators can collect highly detailed information about a given driver and vehicle, for example. "They get a nearly real-time report on specific drivers," Kedzie says. "It includes where drivers stopped, how long they rested, how often they braked or hard-braked, and the engine temperature."

It might sound like Big Brother has moved into the trucking industry, but analyzing this data and training drivers accordingly can translate to real savings.

"Between the worst driver and the best, the difference in fuel economy can reach 25 percent," says Michael Roeth, executive director of the North American Council for Freight Efficiency.

Others cite more modest gains from technology designed to encourage fuel-efficient driving behavior. For example, GreenRoad, a driver performance and safety management firm based in Redwood City, Calif., reports that drivers using its real-time feedback system consistently cut fuel and maintenance costs by 10 percent.

Oil and gas company Shell claims its FuelSave Partner system for commercial trucks can also improve fuel economy by 10 percent. The Shell system collects information on 13 separate driver behaviors, such as hard-braking and excessive engine revving, and creates weekly or monthly emissions, fuel, and efficiency data reports for fleet managers.

Tractor-trailers in the United States currently average just six mpg. But some fleets can achieve up to 8.5 mpg, with the most efficient trucks reaching 10.5 mpg.

"If we could bring the average up to the best real-world experience today, incredible cost would come out of freight," says Roeth. At current diesel fuel prices, each one-percent fuel economy improvement saves about $900 per truck annually.

"Between the worst truck driver and the best, the difference in fuel economy can reach 25 percent."

– **Michael Roeth,** executive director, North American Council for Freight Efficiency

A TRUCKING TRANSITION

The tipping point doesn't seem far off. "The nation's truck fleet is as old as it has ever been," says Roeth. That's because, in hard economic times, fleet operators are keeping trucks longer. But new purchases can be postponed for only so long, and an influx of new trucks will hit U.S. highways within the next few years, according to Roeth.

It's an opportune time for the recently finalized fuel economy standards in the United States, where liquid fuel consumption

by medium-and heavy-duty vehicles represents 26 percent of all transportation fuels burned. Trucking fuel consumption has increased more rapidly—in both absolute and percentage terms—than consumption by passenger vehicles.

A projected 628,000 Class 8 trucks (the heaviest trucks on the road, including big rigs) will be produced in North America in 2012 and 2013, according to commercial vehicle industry analysis firm ACT Research. This figure includes an estimated 45,000 trucks to be exported to countries including Australia, South Africa, and Russia.

"This estimate is nearly the total of all trucks built from 2007 to 2010," Roeth notes. "It is crucial these trucks include fuel economy features."

Increased truck production is not just a North American trend. ACT also reports increases in Europe and China, where heavy-duty truck purchases jumped to more than 1.1 million in 2010, from 200,000 in 2001.

"Trucking is a deeply cyclical industry – either feast or famine," says ACT President Kenny Vieth. In 2006, for example, North America produced more than 375,000 heavy trucks, about 40,000 more than ACT predicts for 2013. Strong growth in heavy-duty truck production over the next two years would make up for the profoundly weak market of the past few years.

As hundreds of thousands of new trucks begin moving the world's freight during the next two years, it's crucial that fuel efficiency per ton of freight improve, says Roeth. "Increasing ton-miles per gallon delivers the best result," he explains. "Pickup trucks can get 20 miles per gallon, but we don't want 60 pickups hauling what one tractor-trailer can haul."

KEEPING UP WITH THE CHANGES

The drive to use technology for improved big rig fuel economy reflects several fundamental changes in the business of moving freight by truck, from new emission standards to rising fuel prices.

"In 20 years, the government has issued five versions of pollutant emission standards," says Roeth. Scrubbing systems and other equipment required under those regulations tend to add weight to trucks.

In general, trucks are getting heavier. "But the overall weight limit hasn't changed," Roeth notes. Trucks need to be able to haul more weight using smaller engines and fuel tanks.

FUEL TOOLS DELIVER SAVINGS

"Our customers are looking for every opportunity to save fuel," says Peter Adams, program manager for Smart Transport at Shell Global. Shell hopes its subscription-based FuelSave system will increase loyalty among commercial truckers.

"If we help our customers manage their fuel effectively, they remain profitable, stay in business, and keep buying fuel," says Adams.

One customer in the Netherlands, for example, has piloted the Shell FuelSave Partner system on 17 trucks in its recycling division. Logistics service provider Emons Group's 450 trucks, which haul chemicals, glass, and other cargo, consume nearly four million gallons of fuel annually.

Fuel alone accounts for about one-quarter of Emons' operating costs, so the FuelSave pilot's results were encouraging. The 17 trucks using the Shell system for six months dropped fuel consumption by an average of 5.3 percent, with some individual drivers achieving 10-percent savings.

New innovations promise even bigger savings on the horizon. "The sky's the limit as to what technology can provide," Kedzie says.

It's becoming possible, for example, for a truck to be programmed to shift at just the right time for maximum fuel efficiency and minimum wear and tear. Braking can be automated, with the proper distance calculated based on road conditions, weather, and load weight. Other systems use retinal observation to detect signs of driver fatigue.

"Trucks are becoming more intelligent," Kedzie notes, "which will result in the industry becoming safer, more fuel efficient, and more productive." ■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Using INCOTERMS to Simplify Global Sourcing

Specifying standard trade terms in international sales contracts lets shippers take shipment transport cost and risk responsibility in hand when it benefits them most.

By Simon Kaye

Speed is vital to global sourcing and shipping operations, but it requires planning and preparation. Inadequate preparation is the most preventable – and costly – cause of shipping inefficiency. Planning for all the contingencies that impact global sourcing, particularly contract terms, is essential.

Companies that still use the contract terms prevalent decades ago are missing the opportunity to improve supply chain performance by using International Commercial Terms (Incoterms) 2010. Published by the International Chamber of Commerce, these internationally accepted trade term definitions are used worldwide in global and domestic sales contracts.

Incoterms help avoid the confusion created by varied interpretations of the rules in different countries. They specify the exporting seller's and importing buyer's obligations regarding carriage, risk, and costs, and establish basic transport and delivery terms. (*See chart, next page*.)

Contrary to conventional perception, Incoterms only define contractual rights for risk and responsibility. Both the buyer and seller must separately specify where ownership and title transfer.

The 11 rules presented in the 2010 revision of Incoterms comprise four groups: C, D, E, and F. A three-letter code starting with one of the four group-signifying letters represents each rule.

Inexperienced and small-scale importers generally specify Group C Incoterms, under which the seller arranges and pays for shipping without assuming its risk. Sophisticated importers, however, prefer to use Group F terms, such as the Free on Board (FOB) rule.

CHARGES VERSUS SAVINGS

Importers who are unfamiliar with the implications of Group C Incoterms, such as Cost, Insurance, and Freight (CIF) – which designates that the seller pays all cost, insurance, and freight charges – may believe these terms are more convenient because everything is included in the final price. This arrangement complicates verifying freight and insurance charges, however, and can put the shipper at a disadvantage.

Carriers typically build additional freight charges into their rates to cover insurance, currency fluctuations, and shipping risks – most of which are rarely itemized for the importer. As a result, importers often pay a higher price when the seller chooses the freight company.

Even large companies that source globally do not realize how much flexibility they have to determine how and when title transfer for imported goods will occur. Structuring contracts of sale to use Incoterms Group F – under which importers pay for shipping – allows importers to control, manage, and track their shipments themselves, while allowing them to delay the point at which they record the goods into their inventory.

Increased supply chain visibility and import shipment control are critical FOB benefits. By taking control as cargo crosses the ship's rail at the port of origin, importers gain better supply chain shipment management.

It's critical to understand that Incoterms do not cover when goods ownership or title transfer, or other considerations necessary for a complete sale contract. Title transfer is separately agreed upon between the parties in the contract of sale under applicable law.

Importers from any industry can specify in their contracts that title to the goods does not transfer from the seller until the importer takes possession at a specified point, even when paying freight costs for the imports being sourced.

Deferring ownership can delay accounting for costly shipments as inventory, which reduces expenses and boosts reported income. The sales contract can provide for supplier invoicing upon confirmed arrival at the destination port.

An online tracking system provides real-time cross-checking and shipment timing, a huge advantage in making such arrangements work.

BETTER BILLS OF LADING

Electronic tracking also greatly simplifies managing bills of lading, which show where and from whom goods are received, describe the shipment, and define carrier liability. These documents typically carry voluminous terms and conditions that contain clauses addressing exoneration, benefit of insurance, and limitation of liability. These clauses effectively limit insurance coverage, particularly if the goods are shipped using CIF Incoterms.

Deferring ownership can delay accounting for costly shipments as inventory, which reduces expenses and boosts reported income.

The new Rotterdam Rules, endorsed by 22 countries that account for 25 percent of world trade, offer some relief. They allow liability terms to be included in individual, confidential contracts that cover door-to-door multimodal shipping.

The Rotterdam Rules clearly document responsibility and liability during the whole transport process. But they are complex, and leave shippers with the problem of negotiating insurance terms.

Importers can ensure adequate insurance coverage by using FOB

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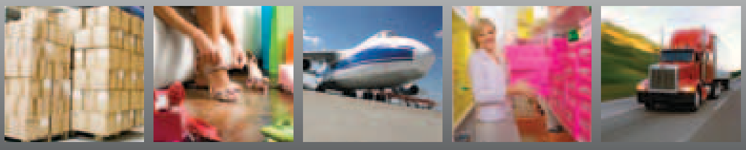

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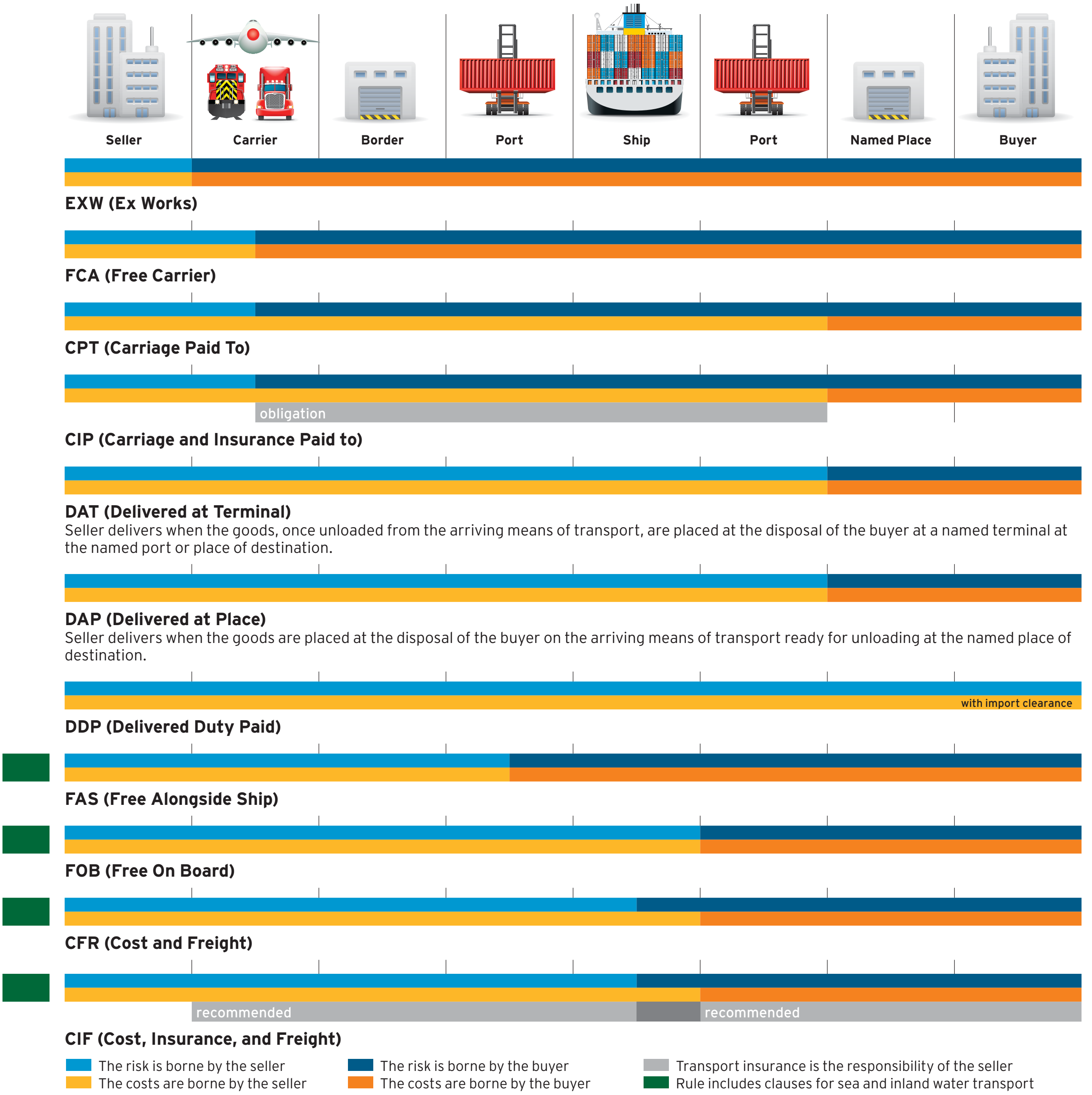
Simon Kaye is founder and CEO of Jaguar Freight Services.

Incoterms Illustrated

Not sure which Incoterms 2010 rule offers the conditions you want? This chart illustrates each Incoterms rule, showing which party bears responsibility for risk, costs, and transport insurance throughout the sale and shipment of goods.

Note: *If responsibility transfers between two points, the buyer and seller must state when the transfer takes place.*



Source: International Chamber of Commerce, Incoterms 2010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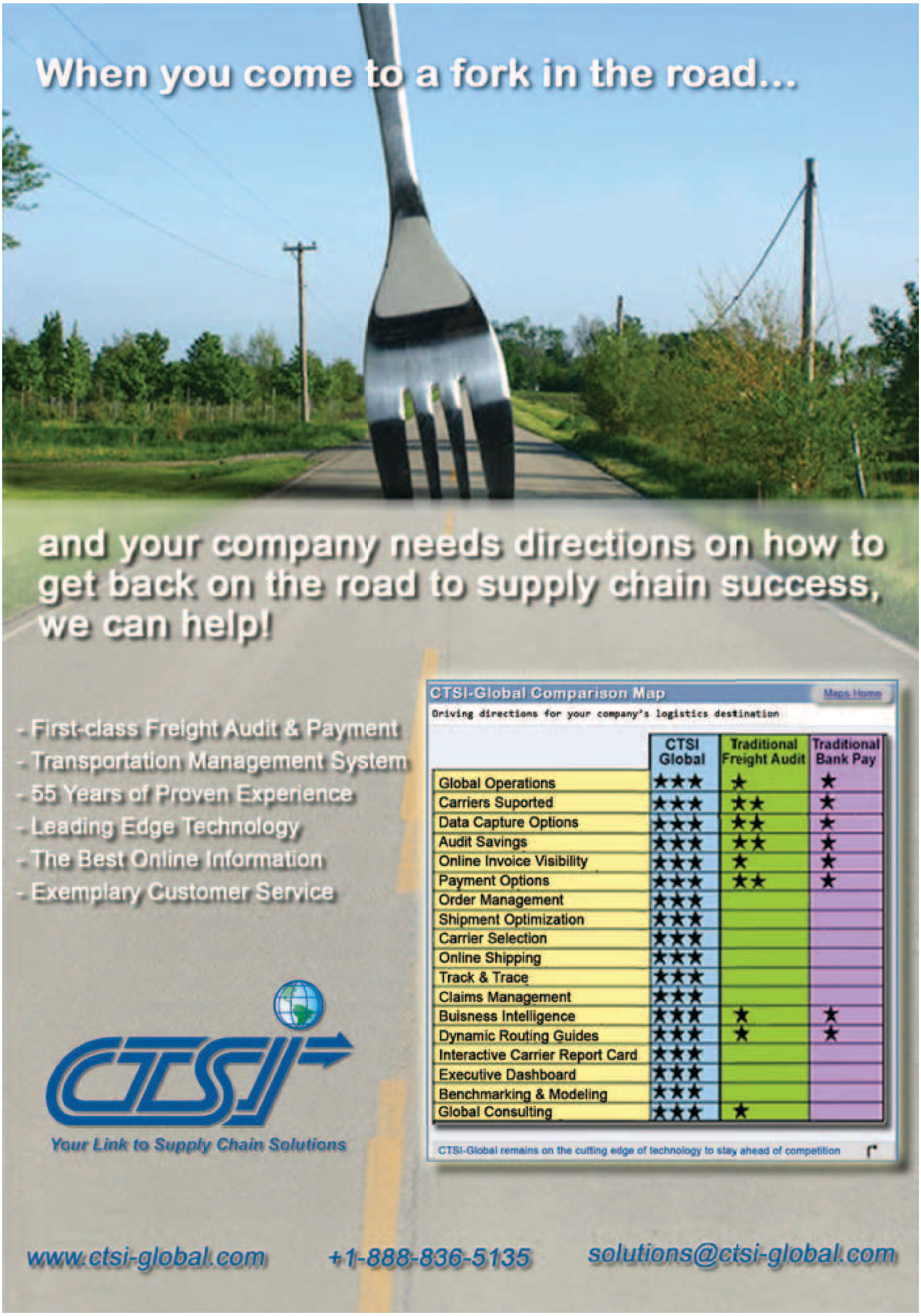
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RETRACING THE TRAILS OF THE IRON HORSE

Meet the pathfinders, engineers, industrialists, and dreamers who pioneered the Transcontinental Railroad and U.S. economic expansion and growth.

BY JOSEPH O'REILLY

IN 1975, 13 PROMINENT MEMBERS OF THE WESTERN WRITERS OF America, a group of authors dedicated to creating Western fiction, published a seminal history of westward U.S. railroad expansion titled *Trails of the Iron Horse*. Their task was to revisit accounts of colorful characters, derring-do, corruption, courage, and perseverance. They wrote about industrialists who operated outside the law, engineers that sacrificed life and liberty in the pursuit of laying down tracks, and government leaders who had great expectations—then seized them without quarter.

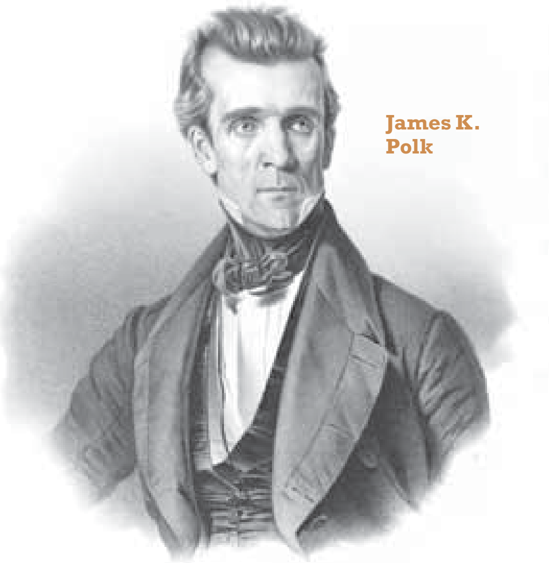
This is the story of the Transcontinental Railroad and the legacy that many of today's railroading pioneers continue to grow.

While globalization and technological innovation have radically changed the means of transportation over the past 150 years, the U.S. railroad remains a fixed part of the continental topography. Nineteenth-century railroaders were hell-bent on expanding track in uncharted wilderness, and today's successors are equally determined to open rail intermodal transport to a new world of shippers. Then as now, Asian trade is a primary motivator for and benefactor of U.S. rail expansion.

The following excerpts from *Trails of the Iron Horse* – contextualized by *Inbound Logistics* in bracketed asides – share a passion and curiosity for Western railroad history that would be impossible to replicate in a post-deregulation world.

They reveal nostalgia for the wild and lawless Iron Horse, and offer a welcome reprieve from the burden of government regulation that derailed progress throughout the 1970s. In that sense, given the context of the day, they may collectively serve as a cautionary tale.

Join *Inbound Logistics* and the Western Writers of America as we revisit the pathfinders, engineers, industrialists, and dreamers who pioneered the Transcontinental Railroad and U.S. economic expansion and growth.



James K. Polk

THE PATHFINDERS

Andrew Jackson | Asa Whitney | James K. Polk

U.S. expansionist sensibilities and successes laid the foundation for building a transcontinental railroad. But as Don Russell, editor of *Trails of the Iron Horse* suggests, the western railroad really wasn't invented. It happened.

A number of forces and influences drove transcontinental railroad development, ranging from technological advances in locomotion to U.S. military movements and explorations, and increasing immigration and homesteading throughout the Wild West. But perhaps most important was the vision of a select few who saw what could be.

As practical men strove to perfect the great machine of the 19th century—the locomotive—and all its accompanying requisites, they began to typify the spirit of the nation. The railroad was the technological symbol of an era and, by the 1840s, Americans had come to believe that they could accomplish just about anything.

They called it Manifest Destiny: "To overspread and possess the whole of the continent for development of our great experiment in liberty and self-government."

This had been envisioned by early presidents such as George Washington, Thomas Jefferson, James Madison, and Andrew Jackson. The puny new nation brought forth on this continent by our forefathers was hemmed in by territories belonging to powerful, threatening giants, masters of the world: England, France, and Spain, struggling with one another for spoils of conquest.

Andrew Jackson, president from 1828 to 1836, had defeated the British at New Orleans, but the War of 1812 had proved indecisive. Spain held the Southwest, plus California and Florida. The Spanish inflicted the last thorn in our nation's foot, when they armed and incited the Native Americans to raid South Georgia.

Andrew Jackson

The fiery Jackson wouldn't stand for this, and sent a punitive expedition into north Florida to retaliate. Rather than lose Florida by war, as seemed inevitable, Spain sold the peninsula to the United States.

Sam Houston was a pupil and disciple of Jackson, who was his mentor and idol. Secretly, Jackson sent the young giant to Texas, with acquisition in mind. Houston defeated Mexican General Santa Ana and formed the Republic of Texas, which in due time joined the United States, as Jackson had hoped.

Surely a transcontinental railroad would further Manifest Destiny. What's more, the mouths of Eastern capitalists watered at the prospect of tapping Asia's riches by such a shortcut. Almost without exception, early promoters of the railroads based their argument on the Asiatic trade.

Such arrogance or ignorance of free enterprise allowed a Connecticut Yankee merchant named Asa Whitney to court Congress in 1844 with an outlandish plan aimed at developing a cross-country railroad corridor—while earning him a fortune.

Whitney asked the United States to deed to him, at 16 cents per acre, a strip of land 60 miles wide from

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Wisconsin to the Pacific Ocean, on which he would build a railroad. He would finance his railroad by laying a few miles of track, which would increase the land's value.

He would sell the completed stretch of track at a large profit, using the proceeds to lay for further construction – on and on until he reached the mouth of the Columbia River.

In 25 years, declared Whitney, the United States would have a railroad over which the treasures of the Orient would flow.

But the time was not yet ripe. A young Congressman from Illinois, Stephen A. Douglas, said, "By all means, build a railroad, but begin it at Chicago."

"Not so," cried out in print the editor of the influential *Police Gazette*, based in Independence, Mo. "This should be the starting place!"

Whitney's 25-year prediction was right, but his personal aspirations never materialized. The vision, however, paved the way for others to complete what he could not. The path toward a transcontinental corridor required a poke—a James K. Polk.

The 11th president of the United States, a Democrat from Mecklenburg County, N.C., is arguably one of the most influential and least-recognized leaders in the history of the United States.

President James K. Polk was a continentalist who not only believed in Manifest Destiny, but did something about it in 1848.

He went to war with Mexico, and the treaty of Guadeloupe Hidalgo ceded to the victor our great Southwest and California. Polk, another of Andrew Jackson's pupils, had learned his lessons well.

Then the United States spread from ocean to ocean. But the East was separated from the West by 2,000 miles of terra incognita, "The Great American Desert," as our fertile wheat and livestock heartland had been named, and by "impassable mountains," the Rockies and Sierras.

THE CROSSING

Rock Island Bridge

Crossing the mighty Mississippi was arguably the first major engineering feat necessary for westward expansion. The challenge pitted the Burlington and Rock Island railroads against one another as both vied to bridge the gap between Rock Island, Ill., and Davenport, Iowa, and capture the coveted western trade.

The task of engineering a span across the river also invited antagonism from two other competing interests: the existing steamboat and ferry services that owned the river.

Bridging the Mississippi was of significance to all. But to the Burlington, it was a setback that this project had gone to the Rock Island. Along with another competing railroad, the North Western, the Burlington awaited the outcome.

The Rock Island began constructing piers in 1853, while the river people watched with trepidation. The future, with all its uncertainty, was here.

The bridge was in trouble even before construction began. There had never been a bridge—railroad or any other kind—over the Mississippi. The long-overdue confrontation festering between steamboat interests and railroaders was coming to a head with the projected Rock Island Bridge. Public opinion leaned toward the steamboats; they were efficient, reliable, and, of course, they had been there first.

But work went on inexorably. Gradually, the wood and iron structure arose from granite piers. The wooden structure was 1,582 feet long, the spans 250 feet with the drawbridge span 285 feet. When opened, the channel for river traffic on both sides of the pier was 120 feet wide.

Work was completed April 21, 1856. The first train crossed the next day. Traffic immediately flowed regularly across the stream, linking Iowa and Illinois by rail for the first time.

Spectators were amazed and disappointed. The bridge was a novelty for its time and place, and they had expected it to collapse under the first train.

The Rock Island's triumph lasted only two weeks.

On May 6, 1856, a steamboat, the *Effie Afton*, came upriver. It was dusk, and the bridge tender did not see her at first. The low-muffled blast of her whistle alerted him. He peered through the growing darkness, saw the boat coming nearer, and opened the draw as quickly as the mechanism would allow.

The steamboat moved carefully through the draw and proceeded some 200 feet before something went wrong. She suddenly veered – even though there was no wind. Then she heeled hard to the right. Her starboard engine stopped, the port engine quickened.

The boat slammed into the span next to the open draw. There was an explosion from the depths, and the *Effie Afton* burst into flames. The new bridge was blazing, a pier badly damaged, the draw pivot jammed.

Volunteer firemen from both states saved all but one span. But before repairs could be made, a high wind swept downriver against the crippled bridge, lifted the draw span, and threw it on its side.

The Rock Island Bridge debacle will probably be best remembered for introducing an inspired lawyer from Illinois who defended the interests of the railroad and would soon capture the hearts of the Union.

Undaunted, the Rock Island began repairs in the face of a lawsuit from the steamship company. Long court battles ensued. Abraham Lincoln, appointed the railroad's principal attorney, defended the railroad's right to bridge the river.

"People have as much right to travel east and west as north and south," he remarked.

Already known for his simple, direct approach, Lincoln and a helper measured the river's flow. There was no current at point of impact. It was in keeping with a report on the river in the bridge area made earlier by Robert E. Lee, then an Army engineer. With no current at point of impact, the cause of the crash lay either with the steamboat captain or the *Effie Afton*'s defective machinery.

Sympathy for the steamboat interests held greater sway than Lincoln's simple, logical explanation, and he lost the first two trials. However, the groundwork he laid for the defense became known in the courts, in Congress, and throughout the nation.

The case finally ended in the Supreme Court in 1862, and the railroads won. It was the last time they had to defend the right to bridge a navigable stream.

THE ENGINEER

Theodore Judah

For many 19th-century pioneers, the allure of the unknown was incentive enough to move west. Some went for the color—if not for the gold seams that both made and ruined men, then for the silver and gold coinage spent freely as commercial businesses sprouted up around Gold Rush settlements. Others were merely homesteaders looking to stake a claim on a new way of life.

Theodore Judah went to California to build a railroad.

The 23 miles of rail constituting the first railroad track west of the Mississippi River was never impressive in itself. The Sacramento Valley Railroad, intended to connect the state capital on the river with the gold camps of the Sierra foothills 75 miles and more to the east, was built as far as Folsom and never any farther. Some of the miners did ride its yellow coaches, some supplies were hauled up the wide valley by the puffing bell-stacked engine, but the line was not an economic success, nor did it greatly ease the difficulties of those it served.

Its importance in history lies in the fact that Theodore D. Judah of Troy, N.Y., was brought west to engineer its building.

After attending a technical school in his hometown, Judah leaped into the construction of a railroad between Troy and Schenectady. From then until his death, he was devoted to the rail lines.

At 22, Judah built the famous track in the Niagara Gorge. As his reputation spread, he built bridges and surveyed rail lines all over New England, until C.L. Wilson, president of the newborn Sacramento Valley Railroad project, sought him out and offered him the job of chief engineer.

Judah hesitated. A brother in San Francisco had written of the difficulties in which the new state wallowed, but Wilson kept after him until Judah and his wife took the steamer for California.


Theodore Judah

The work of grading the line was begun in February 1855. In June, Judah and three company officials lifted a flatcar onto the fresh-laid rails, and the platform was pushed up the hundred yards of finished track, making them the first passengers ever to ride west of the Mississippi.

The Sacramento was extended to Folsom in record time, but financial depression had gripped the state, and the promoters were forced to put away their grand schemes of steel lines stretching all along the coast. The Sacramento Valley road, as the wags said, started in a river marsh and ended in a dust field.

Judah was out of work. The rational thing for a man of his ability and experience would have been to return East, but he had been bitten by the California bug. He had tramped and ridden through the Sierra Nevadas, and an obsession was growing within him. Edging toward it, he talked to many people about projected railroads, none of which got past the planning stage.

What finally became a clear mandate to him was his vision of bridging the great mountain spine with a railroad to connect the Pacific Coast with the Eastern seaboard.

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Collis Huntington

THE INDUSTRIALISTS

Leland Stanford | Charles Crocker | Mark Hopkins | Collis Huntington

Theodore Judah was an engineer by trade, but perhaps his greatest contribution to history was his tireless efforts pushing Congress toward funding for a Pacific railroad, then a transcontinental one.

After years of pressing buttons in Washington, and delay due to the untimely outbreak of civil war in 1861, Judah finally succeeded when Congress consummated the Railroad Act of 1862, providing for the formation of two railroads as a measure to preserve the Union.

The Union Pacific would build the main line to the California border, and the Central Pacific would lay tracks from Sacramento to meet it—though eventually they connected in Utah. The project received land grants of 10 sections per mile, and a first-mortgage loan from the government of $48,000 per mile through the Sierras and Rockies, and $32,000 per mile across the Great Basin between the mountain ranges.

Thomas C. Durant was the Union Pacific benefactor of the Railroad Act, largely attributed to the fact that he had hired Abraham Lincoln as attorney for the railroads during the *Effie Afton* fiasco in 1856.

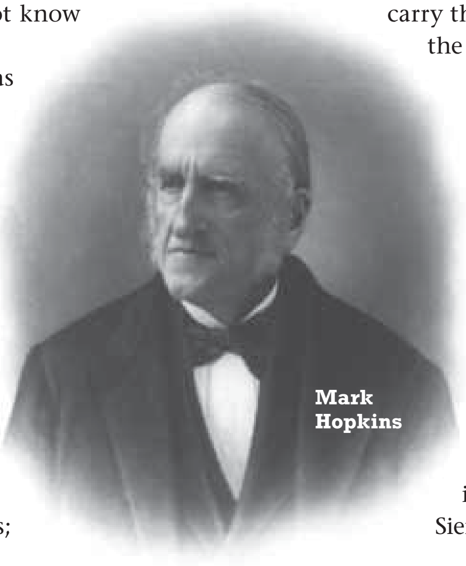
On the other side were four men of commercial means who would ultimately become the robber barons of the western railroad.

Jubilantly, Judah went to San Francisco to raise money. San Francisco resisted him. So did Sacramento when he went there to meet with moneyed men. But Judah did not know when he was beaten.

A second meeting in the capital city was arranged, this one over a hardware store, sparsely attended by a few friends, a handful of Sacramento men—and four who made the difference.

With barely a dozen men in the room, none of them likely material to launch so vast an undertaking, the four key men were Leland Stanford, a grocer; Charles Crocker, a dry goods merchant; and two partners in the hardware store, Mark Hopkins and Collis Huntington.

Huntington was the acknowledged business leader. It was he who would fight new legislation through Congress; browbeat manufacturers of rails, locomotives, equipment—whatever was needed—into selling at prices below their regular levels; and trade with ship owners to carry the massive loads 13,000 miles around the Cape of Good Horn.



Mark Hopkins

Hopkins was watchdog of the treasury, scrutinizing every item to wring from it their full share.

Stanford, grocer and politician, used all his connections and know-how to milk more subsidies from the state legislature and all of the communities who hoped to profit when the road came through them.

And huge Charles Crocker, dealer in dry goods, would physically drive the steel rails over the "hill" that 90 percent of Californians insisted could not be conquered: the Sierra Nevada mountains.

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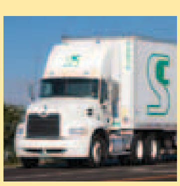
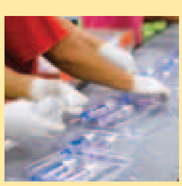
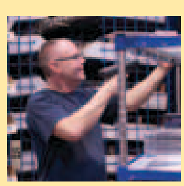

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The Associates, as they came to call themselves, grew into a force to be reckoned with. Judah needed their backing to finance his venture, but soon recognized their capitalist interests were at odds with his otherwise noble endeavor.

Taking in the four Sacramento merchants, Judah took a camel into his tent. Together they would drive the engineer out of the company before work on the railroad was barely begun.

The Federal law creating the Central Pacific Railroad was passed, but it specified that no subsidy should be paid the company until the first 40 miles had been built. Effectively, it forced the promoters to pay that cost themselves, either out of their own pockets or by finding the money somewhere.

Huntington took off for Washington to lobby for help. Stanford, already strengthening his political connections in a bid that led to his election as governor, squeezed concessions from the counties and cities through which the rails would pass, as well as from the California state legislature in Sacramento.

The ways of the engineer and the promoters parted quickly. The four partners wanted the first 40 miles laid as cheaply as possible. Judah wanted to build well, for permanence. That was not the only disagreement. Judah wanted a correct, conventional financial structure aimed at benefitting the road; the merchants were accustomed to quick profits and devious methods of achieving them.

The four came up with a wonderful compromise, independently incorporating a contracting company which, as directors of the railroad company, they hired to construct the Central Pacific. Some organization had to build it, and would profit from the job. It might as well be they themselves.

Judah, horrified at such chicanery, protested loudly, and the open break yawned. It was agreed that the four merchants would buy out the engineer's interest for $100,000, or he in turn could buy out each of them for a like amount.

Eternally optimistic, Judah started for New York, certain now that the Vanderbilt interests would back his Pacific railroad. But it will never be known if he was right. He contracted yellow fever en route, and was dead shortly after landing in New York.

The joining of the Union Pacific and the Central Pacific railroads, 1869

THE GOLDEN SPIKE

Central Pacific Railroad | Union Pacific Railroad

After Judah's untimely demise, the Associates took control of the Central Pacific operation and began the tedious process of laying track over the Sierra Nevada. Crocker, the operations man, bossed the project while his partners continued fundraising, scheming, and politicking.

Stanford, who had proposed using Chinese immigrants as cheap laborers—and for whom Stanford University is named—was elected governor of California in 1862 while also serving as de facto president of the Central Pacific.

The process of building the railroad was slow and labored, with funding shortages and never-ending engineering challenges often contributing to a glacial pace. All the while the Union Pacific, led by Durant and his Irish workers, was making swift progress from the Missouri River.

On May 10, 1869, at Promontory Point, west of Ogden, Utah, the stage was set for the wedding of the rails.

According to Union Pacific accounts of the historic occasion, as soon as Stanford's special (the train hitched behind the *Jupiter* locomotive) rolled to a stop, Chinese laborers from the Central Pacific's construction gangs rushed in to level the ground in the gap, readying it for the last ties and the joining of the iron.

On orders from W.B. Hubbard, Western Union superintendent, wires from the nearest telegraph pole, on top of which

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The Gateway Logistics Experts

a nine-year-old boy was perched for a bird's-eye view of the proceedings, were run down to a special operator's kit on a small four-legged table beside the gap.

Seated at the table, W.N. Shilling of the company's Ogden office waited to tap out a blow-by-blow description of the final act to the waiting nation. A silver-headed spike maul, wired so that its blows would activate the telegraph key, lay waiting.

While the crowd cheered, the last tie was carried into place by Superintendents J.H. Strobridge of the Central Pacific and S.B. Reed of the Union Pacific. Now all was in readiness for the driving of the Golden Spike.

All Western Union wires had been cleared for the Promontory news and finally, as an eager nation waited, the messages began clicking out into space. At 2:40 Eastern Time, the telegrapher tapped:

WE HAVE GOT DONE PRAYING. THE SPIKE IS ABOUT TO BE PRESENTED.

This proved to be a long ceremony, for there were many spikes. One of silver; one of silver and gold; another ribbed with iron, clad in silver and crowned with gold; and the last, the Golden Spike. Various states—Arizona, Idaho, Montana, and California—had donated spikes and all had to be presented with appropriate speeches. There were speeches, too, by Governor Stanford, General Dodge, and others.

Governor Stanford was to strike the first blow that drove the Golden Spike, and the signal that it was about to be driven—three dots by the telegrapher—was given. The governor then stepped forward, took the silver-headed maul, and, while the crowd and the nation waited in a breathless hush, swung—and missed.

Shilling, however, had already tapped out his message:

IT IS DONE.

The official announcement, flashed to the Associated Press and to President Ulysses S. Grant, read:

THE LAST RAIL IS LAID! THE LAST SPIKE IS DRIVEN! THE PACIFIC RAILROAD IS COMPLETED! THE POINT OF JUNCTION IS 1,086 MILES WEST OF THE MISSOURI RIVER AND 690 EAST OF SACRAMENTO CITY.

The two engines, *Jupiter* and *119*, covered with cheering celebrants, then advanced until their pilots touched. Bottles of champagne were broken on them, the bubbling wine flowing down over the Golden Spike and the laurel tie.

As soon as the ceremony was over and the tracks cleared, crews from both the Union Pacific and the Central Pacific rushed in, removed the precious spikes, and replaced them with ordinary iron spikes, while the officials of both roads retired to Governor Stanford's car for lunch.

There they talked over the stirring experiences of the past three years, during which a continent had been spanned with two thin lines of steel.

As a final gesture of farewell, each train steamed across the junction of the rails, standing for a triumphant moment on the other side before departing for the East and the West. ■


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MAKING IT TO THE FINAL CONTEST THAT DETERMINES A PROFESSIONAL SPORTS championship takes practice, hard work, and determination–whether you're an athlete competing or part of the team charged with planning the momentous event. The whole world will be watching, and the slightest oversight could have game-changing repercussions.

The complications involved in organizing these events seem endless. The venue changes every year, crowds number in the hundreds of thousands, local weather can be unpredictable, and the host site may not be prepared to handle the accompanying demands.

On the following pages, go into the locker room to discover how the planning teams behind Super Bowl XVLI and the 2011 PGA Championship prepared for—and pulled off—world-class sporting events.

Lucas Oil Stadium, Indianapolis

TACKLING A SUPER-SIZED LOGISTICS CHALLENGE

When their city was chosen to host Super Bowl XVLI, Indianapolis organizers and logistics experts huddled up to create a game plan that would deliver a big win.

By Lisa Terry

Organizers of the 2011 Super Bowl in Arlington, Texas, faced challenges including frozen roads, ice falling from the stadium roof, events spread 30 miles apart, and pre-sold temporary seating that was not ready on game day.

For the team tasked with planning Super Bowl XVLI—held Feb. 5, 2012, in Indianapolis—those glitches might have served as an intimidating preview of the trouble in store for them.

But the Indianapolis Super Bowl Host Committee had recruited a local logistics resource to help develop its game plan: Vice Chair Cathy Langham, president of Indianapolis-based Langham Logistics, a full-service provider of transportation, warehousing, fulfillment, and freight management solutions. From the initial fundraising effort through the big game and beyond, Langham helped lead a largely volunteer team of more than 60 committees and 140 subcommittees.

Logistics managers will recognize some of the coordination challenges a Super Bowl planning committee faces: scheduling carefully timed deliveries into a tight location, complying with strict customer requirements, and coordinating events with a large number of constituents.

But other tasks go beyond typical logistics management scenarios, such as scheduling a workforce of 8,000, ensuring delivery and service for 290 portable toilets, and coordinating among multiple federal, state, and local traffic and transportation agencies to help the teams move smoothly between their hotel and practice locations.

Like any logistics operation, the Super Bowl committee must plan for

variables completely beyond its control, from the NFL player lockout that threatened the 2011-2012 football season to a surprise visit from President Obama. Addressing unpredictable weather can prove particularly challenging. In Indianapolis, Super Bowl Sunday 2009 was a snowy, below-zero day. In 2010, it was a sunny 65 degrees.

Winning the Bid

Logistics features prominently in the bid to win the Super Bowl contract from the National Football League. "The selection committee considers a city's ability to mobilize volunteers, coordinate with venues and hotels, and reserve event space," Langham says.

After losing its bid for the 2011 Super Bowl in 2007, Indianapolis undertook a complex process in 2008 for its bid for the 2012 Super Bowl, including raising $25 million in seed money, generating local interest, and nailing down proposed logistics. Langham helped raise funds by meeting with local companies and benefactors, and was one of five Indianapolis representatives presenting the nine-inch-thick bid document to the NFL.

Indianapolis offered the NFL considerable experience and commitment to hosting major sporting events. In 1982, the city set out to forge a reputation as a sports tourism destination, establishing Indiana Sports Corp., a not-for-profit that represents Indianapolis in the business of sports.

In addition to the well-known Indianapolis 500, the city has hosted multiple National Collegiate Athletic Association final four playoffs, Pan Am Games, Olympic trials, and other national contests. Over the past 30 years, Indianapolis has transformed its downtown to accommodate the crowds and hoopla surrounding these events, and amassed a ready corps of volunteers prepared to dedicate their time and effort to delivering "Hoosier Hospitality."

After the NFL awarded Indianapolis the contract for Super Bowl XVLI, the planning committee chose local organizers to help plan the event, rather than enlist the hired hands that traditionally put on the Super Bowl in host cities—although it did tap the NFL's list of well-honed Super Bowl best practices.

The committee discovered there is even more to organizing a Super Bowl than arranging the big game. The NFL strives to leave a lasting, positive legacy in the cities where the Super Bowl visits. In addition to the $125 million to $400 million the Super Bowl infuses into the host city's economy, the NFL's Super Bowl programs include efforts such as revitalizing neighborhoods, educating

Lucas Oil Stadium seats 70,000 fans, but the Super Bowl planning committee anticipated a crowd more than twice that size for the week-long celebration surrounding the event.

local youth, planting trees, and fighting breast cancer. Those programs fall under the host committee's purview, and it chose to go beyond the minimum requirements, providing a range of community-enhancing programs that involved even non-fans.

In addition to the community enhancement programs, the committee's logistics organizers were charged with setting up the NFL Experience, a huge interactive NFL theme park that includes a 650-foot-long zip line; and Super Bowl Village, a 10-day, three-block celebration of football.

PLANNING A PARTY FOR 150,000 GUESTS

The average Super Bowl attendee stays in a hotel for four nights, and spends $1,500 to $2,000 during their visit. With this kind of local economic boost at stake, the Indianapolis Super Bowl Host Committee wanted to ensure it didn't fumble its plans for keeping the 150,000 expected attendees comfortable.

Within walking distance of Lucas Oil Stadium, football fans can take advantage of 7,100 hotel rooms, 200 restaurants, and 50 major attractions. To manage the crowds flooding the streets around the stadium, the Super Bowl committee set up:

- **290 portable toilets**
- **28,000 linear feet of temporary fencing**
- **6,500 linear feet of concrete barrier**
- **74 dumpsters**

Big Game, Small Space

The region around Indianapolis' Lucas Oil Stadium is the most compact Super Bowl location the NFL has selected. That makes it great for visitors, who can focus on having fun, rather than getting to the fun. Thanks to a $3-billion investment, Indianapolis boasts a new stadium, expanded Indianapolis Convention Center, a new airport, and 12 hotels with 4,700 rooms connected via enclosed walkways to the stadium and other venues, complementing the 34,000 additional hotel rooms in the greater Indianapolis area.

While these amenities make attending the Super Bowl easier for visitors, supporting the densely packed locations presents a logistics challenge. All shipments into Super Bowl Village and the surrounding area have to be managed and maintained, from one-time deliveries of tents, heaters, and display equipment to constantly refreshed resources such as food and merchandise.

"The committee sent representatives to New Orleans to observe Mardi Gras," says Dianna Boyce, director of communications for the Indianapolis Super Bowl Host Committee. "They learned how the city and event organizers transported food in and trash out of the event locations, and how they provided access for employees."

Based on the lessons learned, the committee arranged to have all Super Bowl Village deliveries take place in the middle of the night according to a carefully coordinated schedule using an approved list of transportation providers.

The committee also had to develop plans for transportation challenges such as cab strikes, bus drivers getting lost, inaccurate GPS data, road closings, and insufficient road signage. Communication was key, and the organizers leveraged digital technologies such as smartphone apps and social media to distribute information to attendees and volunteers.

The organizers worked closely with representatives of area businesses, including 200 downtown restaurants, to prepare for the Super Bowl. During the week before the game, local employers were encouraged to stagger start times or allow employees to work from home to regulate traffic flows. The committee also developed a transportation and parking plan, and launched an app and Web site to provide up-to-the-minute street closure and parking information.

Technology tools helped the committee coordinate 8,000 volunteers, filling 34,000 shifts throughout the 10-day event. All personnel were trained for tasks such as greeting visitors at the airport, working the NFL Experience event, and offering directions on the street. Workforce management software set schedules, alerted volunteers to last-minute changes, and filled newly opened shifts as needed through text messages to volunteers' mobile phones.

Logistics MVP

Langham Logistics played an active role in the Super Bowl preparations, performing tasks such as shipping and warehousing equipment, and staging parts for entertainment venues. It also managed merchandise such as apparel sold at hotels—picking, packing, and shipping them nightly to replenish inventory.

"The timeframes were very tight," says Langham. "If we were one day late delivering t-shirts, all the spectators would be gone. There was a lot of stress, energy, and activity surrounding the event. Our logistics plans had to be foolproof and failsafe."

Hosting the Super Bowl is not just about a football game. It's about a large group of people pulling together to address a complex logistics challenge.

"The logistics effort to put on the Super Bowl is fascinating, from beginning to end," says Langham. "It's interesting to get an inside view of the effort involved. But I wouldn't want to do it every year. I think the whole community breathed a sigh of relief after the game was over."

TEEING UP A TOURNAMENT

Even with a 10-year lead, planning the 93rd PGA Championship required steady hands and a clear vision.

By Perry A. Trunick

Like each of the 18 holes on a golf course, planning every annual PGA Championship presents its own set of unique challenges. Even after organizing 92 championships, the PGA of America encountered new obstacles while preparing for the 2011 PGA Championship, held Aug. 8-14, 2011, at the Atlanta Athletic Club.

In addition to the 156 golfers competing, the event drew more than 200,000 fans and was broadcast to 203 countries, reaching approximately 450 million households. It also attracted millions of dollars of advertising and promotion by prestige brands—none of whom expected less than the very best. With that many eyes watching their every move, the event's organizers couldn't afford to miss a single swing.

Unlike other large sporting events that take place in stadiums or arenas, the PGA Championship has to create its own infrastructure every year.

"In most sports venues, organizers know where the crowd will sit, the media will set up, and concessions, restrooms, and hospitality suites will be located," says Ryan Cannon, director, 2011 PGA Championship. "They know their parking and security needs. They hold hundreds of events every year during which they can refine their processes."

Getting on the Green

The PGA Championship brings the same logistics issues, but most golf courses are not equipped to handle crowds. Some of them are more than 100 years old, after all.

"The classic golf course architects had incredible vision, but in 1910 Donald Ross or Alister MacKenzie had no idea that the golf course they were designing would one day host an event of the PGA Championship's magnitude," Cannon notes.

One challenge the event's organizers faced was moving 40,000 people on and off the property every day. Attendance varied daily, spiking during crucial periods of play, and addressing the crowd's needs over the seven days of the event was demanding.

Planning began long before food concessions were set up or spectators began to arrive—in fact, preparations for the 2011 championship at the Atlanta Athletic Club began in 2001, at the close of the last PGA Championship held at the site.

"From the moment the next championship is announced, any changes in the infrastructure of the club, the golf course, or within the community become relevant to our plans for the future PGA Championship that will be held there," Cannon says.

For example, the PGA wouldn't want the state Department of Transportation (DOT) to select the second week in

Spectators filled the temporary bleachers constructed at the Atlanta Athletic Club for the 2011 PGA Championship.

Crowds of fans flooded the Atlanta Athletic Club during the week-long 2011 PGA Championship.

A MOVEABLE FEAST

To project food and drink supply needs for the 2011 PGA Championship, planners consulted data from the previous year's event. Over seven days, more than 225,000 people attended the 2010 PGA Championship in Kohler, Wisc. The event's organizers brought in truckloads of concessions, as well as 10 50-foot refrigerated trailers to store perishable food on site.

Among the snacks consumed were:

- **200,000 bottles of water**
- **150,000 bottles of soft drinks**
- **180,000 glasses of beer**
- **25,000 bags of chips and pretzels**
- **8,000 chocolate chip cookies**
- **200,000 bratwursts and hot dogs**
- **24,000 grilled chicken breast sandwiches**
- **50,000 hamburgers**

August for highway bridge repairs near the club. The state DOT of a PGA Championship site is notified of upcoming events so it can try to minimize the impact of future projects on the event's logistics.

Looking Way Ahead

Ten years may sound like an exceptionally long planning horizon. After all, what can happen to impact a golf championship?

As the PGA Championship organizers know, a city can happen: Johns Creek, Ga., the site of the 2011 championship, did not exist before December 2006.

"The town incorporated in 2006, creating a new government entity, with new permitting, and new police and fire departments," Cannon explains. "That government entity did not exist when we chose the site in 2001 for the 2011 event. And we have to work very closely with that entity to set our plans."

The Johns Creek community has grown tremendously. Population statistics are difficult to gather because the city did not exist during the 2000 Census, but one estimate places the growth at 27 percent between 2000 and 2010.

This growth created surprising repercussions for Cannon and the PGA team. For example, one of the parking lots used for the 2001 PGA Championship is now a water treatment facility site. Another has been turned into a residential community. And the road system has completely changed.

"We try to develop and execute the best plan possible," Cannon says. "We benefit from the experience and expertise of the people who have been working on the championship year after year."

There's another vital component: the relationships that still exist from 2001 at the club itself and in the community.

"The local planning team knows that no matter how large the challenges seem, we're going to get through them," Cannon notes. "They have confidence because they've been through it before. That is invaluable."

The experience in the host community can also influence future sites. "These events can disrupt the town's everyday life," he admits. "But the good news is, that temporary disruption also brings tremendous long-lasting benefit."

A Friendly Invasion

When an event the size and scope of the PGA Championship comes to town, it can look like an invading force. The advance guard may be subtle, but that subtlety can disappear quickly.

Cannon and his staff worked with a number of Atlanta Athletic Club members, represented by General Chairman Tom Adderhold, and with many state and local government agencies and officials. More than 50 committees oversaw different functions for the PGA Championship, and more than 3,500 volunteers typically support the event.

The PGA manages every aspect of event operations. Working in conjunction with the host club, it constructs from 200,000 to 300,000 square feet of temporary on-site facilities, including a 22,000-square-foot merchandise tent that functions as a fully enabled retail shopping environment.

After all the planning and effort that goes into setting up the PGA Championship, the organizers don't simply pack up and walk away after the winner is decided. The Monday after the PGA Championship concludes is every bit as busy as the Sunday before the event starts.

"We have to deconstruct everything we spent 10 years planning," says Cannon. "It's an intense back-end operation." That intensity continues for at least two months after the event.

"By the time the PGA Championship is over, most of the host city's residents can't wait to welcome the event back," says Cannon. "We set out to create a community partnership, and that's why we invest so heavily in time, talent, and financial resources to make it happen."

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Ports Help Close the Deal on Economic Development

Port authorities are expanding their focus to industrial development in hopes of attracting more factories and distribution centers to their area—and their cargo services.

by Merrill Douglas

These are still dark days for the country's real estate market. But on properties near many U.S. seaports, the intensifying glow of electric lights around new factories and distribution centers (DCs) creates a brighter picture.

Vacancy rates on industrial properties near seaports fell by 1.4 percent from 2010 to 2011, reaching 8.5 percent, according to a study published in summer 2011 by Chicago-based real estate services firm Jones Lang LaSalle. That compares with a 9.7 percent vacancy rate for industrial real estate in general. Demand for property near airports is picking up, too.

Companies seeking locations for warehouses and DCs, especially near seaports, are fueling much of this growth, says John Carver, head of the Ports, Airports, and Global Infrastructure team at Jones Lang LaSalle. Businesses need more logistics space because they're moving more cargo. And ports are getting ready to handle even heavier volumes.

"Businesses are investing in infrastructure to prepare for the future—the Panama Canal expansion, the emergence of Brazil and other Latin American nations, and the increase of product being transported via ocean container," Carver says. "That's driving the need for warehouse facilities, because that cargo needs a place to go once it hits the docks."

As port operators come to appreciate the role that real estate plays in their success, more of them are joining collaborative economic development efforts. "They're beginning to work with the real estate development industry to jointly promote a more complete solution," Carver says.

That hasn't always been the case. "The viewpoint of the port authorities used to be that once cargo left their gates, it was someone else's problem," he says.

But as ships grow bigger and traffic increases, ports need new strategies to keep containers from piling up on the docks. Solutions based at the port—such as longer gate hours and better automation—aren't enough to solve that problem. "There also needs to be

Photo Courtesy of Port of Portland

The Troutdale Reynolds Industrial Park at the Port of Portland is home to the FedEx Ground regional distribution hub—a $129-million, 441,000-square-foot facility that supports approximately 800 jobs on a 78-acre lot.

a logistics solution, or a destination for that cargo, to keep the ports working at full capacity," Carver says.

Port authorities also focus on industrial development, because a firm with a factory or DC near a port will naturally turn to that port for transportation. And as more cargo moves through the port, more vessels are likely to call there.

That's the thinking at the Port of Portland, Ore., which competes for ocean services with larger West Coast markets such as Los Angeles-Long Beach and Seattle-Tacoma. "We want to market our industrial land to logistics users who will help us draw more carrier service to the region," says Keith Leavitt, the port's general manager, real estate and properties.

Some port authorities, such as Portland, develop and market land that they own. Others focus on upgrading the port and local transportation infrastructure, aiming to attract new shippers who will set up shop on privately owned land next door.

And sometimes "next door" isn't even important. With inland ports in vogue, many traditional port authorities are working to encourage new development on land that's as far as 200 miles away, but tightly connected to the port by rail.

Here's a look at what four U.S. port-centric areas are doing to encourage local development.

PORTLAND: Preparing for a TRIP

As a port that both sells and leases industrial real estate, the Port of Portland has been active on several fronts. One major project is transforming a former brownfield and Superfund site into a busy industrial park.

The Port of Portland bought the property, the site of a former Reynolds Metals plant, in 2007. Now called the Troutdale Reynolds Industrial Park (TRIP), the site encompasses about 350 acres of developable land.

The first company to occupy TRIP is FedEx Ground, which opened a regional distribution hub there in October 2010. In 2011, New York-based Development Partners submitted a proposal to add two natural-gas fired power plants to the site.

Wetlands and power corridors that run through TRIP make the

Indianapolis Aerotropolis Takes Wing

Inland waterways and ocean ports aren't the only transportation centers promoting infrastructure growth. An increasing number of communities are putting airports at the center of plans to spur fresh economic growth. Some leaders have adopted the term "aerotropolis" for the rings of real estate and infrastructure taking shape around busy air transportation hubs. Memphis, Milwaukee, Dallas-Fort Worth, and Atlanta are among the U.S. metro areas that claim the aerotropolis title.

One of the newest U.S. communities to explore the concept is Indianapolis. Last year, the board of the local airport authority approved a 30-year land use and development plan that calls for creating an aerotropolis through the use of public/private partnerships. Now, the Indianapolis Airport Authority (IAA) is seeking buy-in from local governments.

Airport officials contend that the aerotropolis offers a way to make sure that future development on and off the airport produces compatible projects.

The aim is to avoid unfortunate juxtapositions, such as a housing development next door to the airport, or a parking structure in the flight path. "The airport can only control the airport," says John Clark, director of the IAA. "All the activities outside the airport ultimately will influence the success of this effort."

To launch the collaborative aerotropolis initiative, IAA officials met in late November 2011 with representatives from governments such as the City of Indianapolis, the Towns of Plainfield and Avon, Wayne County, Morgan Township, and others. "We're starting a five- to eight-mile radius around the airport," says Corey Wilson, project manager, IND Aerotropolis, at the IAA.

On the airport's own property, the 30-year plan calls for seven development zones, three of them devoted to aviation logistics, among other uses. Two of the zones could host industrial operations such as light manufacturing.

The IAA also plans to turn part of its property into a "Logistics Center of Excellence"—a home for academic programs keyed to logistics and transportation needs in the aerotropolis. Ivy Tech Community College of Indiana is the first school to announce plans to establish a presence at the center, with classes to start there in spring 2012.

Until the IAA and its partners define the terms of their collaboration, it's too early to predict what kinds of companies the aerotropolis might attract to properties surrounding the airport. But Wilson points to the Town of Plainfield as a possible model. "A number of warehouses and distribution facilities have already located there," he says.

Infrastructure improvements, such as construction of a new connector to Interstate 70 near the airport, will be key to attracting additional facilities. "Multi-jurisdictional bodies would have to work together to make that happen," Clark says. "That's what the aerotropolis does: it gives us all a common direction."

development a complex project requiring many years to complete. "Work on the port's newest acquisition, 222 acres in the City of Gresham, will be simpler and faster," Leavitt says.

That land, purchased from technology firm LSI Logic, is zoned for industrial use and development-ready. The Port of Portland is working with the Gresham city government to create a master plan for the site, and develop and market it.

The Gresham property should be especially attractive to advanced manufacturing firms. "They typically need larger sites, which are in short supply within our region, and within the port's portfolio," Leavitt says.

The Port of Portland used its own working capital to finance purchasing TRIP and the Gresham site. State programs are helping to finance new infrastructure at TRIP, where the strategy calls for selling the developed lots to occupants.

A different strategy applies at one of the port's more mature sites, the Rivergate Industrial District, which includes an international container terminal and a bulk terminal for grains and minerals, along with industrial properties. "When a property is strategically related to the marine franchise, we typically lease that property, rather than sell it," Leavitt says.

Most of the land at Rivergate is already leased. One tenant that enjoys the location is Portland-based OIA Global Logistics, which operates a distribution center there for Keen Footwear.

OIA arrived at Rivergate in 2008, occupying a 99,000-square-foot facility, says John Danielson, director of distribution at OIA Global Logistics. It has since enlarged its footprint, taking short-term leases on various facilities as needed to accommodate surges in Keen's business. "We've occupied up to 300,000 square feet," he says.

Keen moved its distribution from California to bring the operation closer to its Portland headquarters. The footwear company and OIA chose the Rivergate complex in part because it's home to Terminal 6, the container terminal.

Portland is one of three import points for Keen, along with the ports of Los Angeles-Long Beach and Seattle. "We wanted to be near Terminal 6 to help control drayage costs," Danielson says.

Rivergate also offered the opportunity to occupy a brand new building with specific features that OIA needed, such as 33-foot-high ceilings and plenty of dock doors. And as OIA has expanded into multiple buildings, Rivergate's flat terrain has made it easy to tie those facilities together on the company's data network.

"We can put a radio frequency antenna on top of the primary Keen facility," says Danielson. "If we get another building in the Rivergate area, we shoot this signal to that building." With a straight line of sight between the various facilities, OIA's warehouse management system (WMS) can move data among them as though they were all under one roof.

Among OIA's neighbors in Rivergate, the newest is Subaru America, which finished building a 413,000-square-foot auto parts DC there in October. Trammel Crow, which developed the property for Subaru, also has rights to the one remaining parcel at the site, 68 acres adjacent to Subaru.

Trammel Crow owns the Subaru building, but the port retains ownership of the underlying property, leasing it to the developer for 55 years. That lease is long enough to let Trammel Crow realize a return on its investment in the building.

BROWNSVILLE: Building a Borderplex

While the port administration plays a major role in developing industrial land in Portland, near the Port of Brownsville, Texas, the leader in that realm is the Greater Brownsville Incentives Corporation (GBIC). Created by the City of Brownsville, based on state legislation passed in 1989, the GBIC promotes industrial and manufacturing activities in the bi-national region that stretches from Brownsville and South Padre Island to Matamoras, Mexico.

Designed for light to medium industrial operations, the North Brownsville Industrial Park took two years and $4.2 million to build. The park is Class A certified and shovel ready.

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Recently, the GBIC dove directly into the real estate business, acquiring a 73-acre property four miles from the port and contracting with the not-for-profit Brownsville Economic Development Council (BEDC) to market the site's 11 lots.

"This is our first shot at developing land in the greater Brownsville 'borderplex,'" says Gilberto Salinas, the BEDC's vice president. The organization used to concentrate on attracting companies to privately developed industrial parks in the region. Today, though, those properties are mostly full, so GBIC is acquiring new land and adding infrastructure to make it shovel-ready.

A .25-percent sales tax funds GBIC's activities, including the purchase and construction of the new North Brownsville Industrial Park. Although this park is relatively small, GBIC has bigger projects on the drawing board. "We've amassed 350 acres, and we're in the process of purchasing another 200 acres near the industrial park," Salinas says.

In buying and developing these properties, Brownsville draws inspiration from the example of other South Texas communities. "We're doing what San Antonio did 10 years ago," says Salinas, citing a land purchase that eventually helped that city attract a new Toyota assembly plant. A similar project in Victoria brought that city a Caterpillar factory.

At the North Brownsville Industrial Park, which officially opened for business in June 2011, the city has already attracted one new business. Piasa, a manufacturer of condiments, flavorings, and spices based in Monterrey, Mexico, is building a manufacturing plant on two of the park's 11 lots.

Although ocean transportation was not a major issue for Piasa, the port comes up in most conversations with companies looking for a site in the area.

"The port continues to be a key asset and a significant economic engine in this region," Salinas says. "The Brownsville borderplex would not be a true international city if we didn't have the deepwater port."

Companies such as Ace Hardware are turning to the Port of Virginia, which can already accommodate the larger ships that will start sailing through the Panama Canal in 2014.

VIRGINIA: An Ace in the Hole

Coastal Virginia is another region where local communities take the lead in promoting development near the port. Their efforts have paid off well: In 2011 alone, companies purchased more than 2.5 million square feet of industrial or warehouse space in the region known as Hampton Roads, near the Port of Virginia.

One community that has seen a lot of action is the city of Suffolk. In 2011, Ace Hardware Corporation and the Navy Exchange Service Command

announced plans to build DCs in Suffolk's 920-acre CenterPoint Intermodal Center.

Ace Hardware currently receives all its imported product through the Port of Seattle. But a distribution network study showed that adding a port on the East Coast could help the company enhance its operations, says Tim Duvall, supply chain director at Ace in Oak Brook, Ill.

After considering several options, Ace chose the Port of Virginia with an eye toward the larger ships that will start sailing through the Panama Canal when the newly enlarged waterway opens in 2014.

"The Port of Norfolk—one of several facilities that makes up the Port of Virginia—is currently the only port that can accommodate the larger vessels," Duvall says. "The port will provide us with opportunities right now that other ports on the East Coast can only start talking about."

Virginia's central location on the East Coast was also an important factor. "The location will provide us with better response time to our retailers, allowing us to help them if a natural disaster occurs," Duvall says.

The new DC in Suffolk will receive and break down imported product for shipment to Ace's regional support centers (RSCs), which then send product to the independent retailers that own the Ace Hardware cooperative. When hurricanes and other disasters send customers rushing to hardware stores for necessities, a DC in Virginia will make it easier to keep those stores well-stocked.

Ace is investing $14 million in the new 330,000-square-foot DC. A $100,000 grant from the Commonwealth of Virginia will help with capital expenditures such as racking.

The company expects to start receiving product at the new facility around May 1, 2012, and start shipping from there to the RSCs around July 1, 2012. Before the Panama Canal reopens, the DC will receive shipments carried by smaller ships through the old Panama Canal.

Another new arrival in the region near the Port of Virginia is Green Mountain Coffee Roasters, which agreed in October 2011 to buy a 330,000-square-foot building in the Shirley T. Holland Intermodal Park in Windsor. Green Mountain will use this facility to roast, grind, flavor, and package coffee for its Keurig Single-Cup Brewing System.

The building that Green Mountain chose had been empty since Johnson Development Associates of Spartanburg, S.C., erected it on speculation in 2007.

Green Mountain Coffee Roasters' new production facility provides a jolt of business for the Port of Virginia.

"Green Mountain came along looking for some space they could get into quickly, yet have room to expand," says Russell Held, deputy executive director, development at the Virginia Port Authority in Norfolk. "At the Port of Virginia, they found the intermodal park, a community willing to put incentives on the table and a state to back them up, and a developer with a building ready to go."

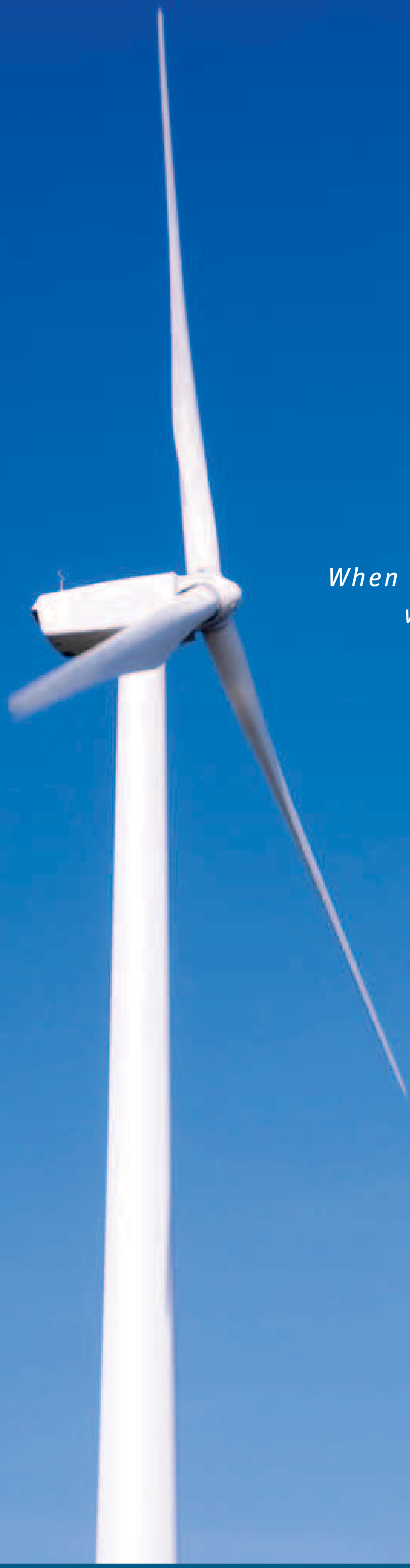
Other companies that took space near the Port of Virginia in 2011 include the Belgian logistics firm Katoen Natie, which bought a former Ford assembly plant in Norfolk, and Communications Test Design Inc., which took a warehouse on the Indian River.

MIAMI: Looking Forward to 2014

Although the ability to receive super post-Panamax vessels gives the Port of Virginia an advantage today in the economic development race, other ports are catching up fast. The Port of Miami, for example, has gained authorization and funding to deepen its harbor to the required 50 feet by 2014.

Also scheduled for that year is the opening of the Port of Miami Tunnel, providing a direct link between the port and Interstates 395 and 95. A partnership between the Florida Department of Transportation (FDOT), Miami-Dade County—which owns the port—the City of Miami, and private consortium MAT Concessionaire, the tunnel will allow trucks to move from the port to the interstate network without encountering a single traffic light, says Bill Johnson, director of the Port of Miami.

A third big infrastructure project underway at Miami's port is construction of an on-dock rail terminal. The $50 million in funding for this project includes a $23-million grant from the federal Transportation Investment Generating Economic Recovery II program, $11 million from the State of



Several economic development projects are underway at the Port of Miami, including the opening of the Port of Miami Tunnel; construction of an on-dock rail terminal; the purchase of four super post-Panamax cranes; and the development of intermodal logistics centers about 50 to 70 miles from the port.

Florida, $11 million from the Florida East Coast Railway, and $5 million from the port.

Those projects—along with other initiatives such as the purchase of four new super post-Panamax cranes—are all aimed at attracting vessels that will use the new Panama Canal. But to thrive in a world of larger ships and heavier container traffic, Miami needs to do more than improve its own facilities, Johnson maintains. It also needs to make sure there are places to receive all those containers.

That's why the Port of Miami recently signed memoranda of understanding with three developers that want to develop intermodal logistics centers in the region near Lake Okeechobee, each of them about 50 to 70 miles from the port.

The three developers are Florida Inland Port, which plans to build a logistics hub in St. Lucie County; Florida Crystals Corporation, which plans to build the South Florida Intermodal Logistics Center in Palm Beach County; and U.S. Sugar Corporation, which is building in Hendry County. Each developer expects its facility to receive containers from various ports along Florida's coasts.

Under the three agreements, the Port of Miami will share ideas with the developers and possibly engage in joint marketing. And it doesn't matter which of the projects succeeds, as long as Miami can rely on a direct rail connection to a major hub that houses multiple logistics facilities.

"I don't want boxes resting on the Port of Miami," Johnson says. "I want boxes moving." And if they can't move directly to their ultimate destinations, they need a stopping point away from the port.

"You need distribution centers and logistics centers—places that have land, mass, and warehousing in large quantities, and the equipment to handle those boxes efficiently and quickly," he adds.

The DCs already in place near the Port of Miami can handle current traffic, says Kevin Lynskey, the port's business initiatives manager. "But long term, we believe the state will need one or two major facilities to accommodate more trade," he notes.

What's true in Florida is also true for any region whose port is looking for more trade in the coming years. Whether they buy and develop land themselves, or collaborate with government and private sector partners in other ways, seaports need industrial properties nearby. And seaports play a crucial role in drawing occupants to those properties.

IN MEXICO, RAIL IS ON A ROLL

Increasing demand from manufacturers, improved infrastructure and service, and a campaign to grab more market share promise further growth for rail service within Mexico and across the U.S. border.

By Merrill Douglas

Rail is hot in Mexico—and getting hotter every year. The country's largest railroad, Ferrocarril Mexicano (Ferromex), saw its carload volume increase by 6.6 percent in 2011 compared with 2010, and revenues increase by 13.9 percent, according to the company's chief executive officer, Rogelio Vélez.

Mexico's second-largest rail carrier, Kansas City Southern de México (KCSM), reports that it moved 15.9 percent more carloads in the first three quarters of 2011 than in the same period in 2010.

These figures represent the growing demand for rail transportation both domestically and between Mexico and the United States.

The "nearshoring" trend is one driver of this growth. Thanks to high oil prices and rising wages, Asia is no longer the obvious low-cost location for companies that manufacture goods for the U.S. market. The increase in corporations building factories in Mexico has boosted the flow of materials headed south from the United States to Mexico, and finished products headed north.

Mexico's central location is a second factor in the county's rail renaissance. "It's in the middle of two hot markets: North America and South America," says Jim Commiskey, vice president, automotive and Mexico at Dublin, Ohio-based Pacer International, a logistics services provider whose portfolio includes a variety of intermodal freight services. "Mexico provides access to raw goods from the United States, and to countries such as Brazil that produce steel and other manufacturing necessities."

A third cause is the fact that the rail industry in Mexico has been playing catch-up since the nation privatized its railroads in the 1990s.

"Rail in Mexico was underdeveloped because the state-owned railroad company, Nacionales de México, stopped investing in it in the years just before privatization," says Vélez. When the private sector took over, the new rail carriers started improving the network and heavily marketing their services. Plenty of opportunity remains to be tapped.

As Mexican railways invest in upgrades that make their services more reliable, shippers are more apt to consider rail—especially intermodal—as a less expensive alternative to long-haul truck, says Paul Hirsch, vice president of Mexico operations at Hub Group, a provider of intermodal, highway, and logistics services based in Downer's Grove, Ill.

"Many large corporations tried intermodal in the past, when the infrastructure and service providers were inadequate, and found that it didn't work," he notes. "Now they are trying it again."

A BIT OF HISTORY

Mexico's current rail system started to take shape in 1995, when the Mexican government announced its privatization plans. U.S. railroad Kansas City Southern (KCS) and Mexican company Transportación Marítima Mexicana (TMM) formed a joint venture to buy the Northeast Railroad concession. KCS bought out TMM's share in 2005 and changed the railroad's name from Transportación Ferrovaria Mexicana to Kansas City Southern de México (KCSM).

In 1998, mining corporation Grupo Mexico and U.S. railroad Union Pacific (UP) joined forces to buy the Northwest Concession, creating Ferromex.

In 2005, Grupo Mexico bought

Mexican railroad Ferromex spent $330 million on new equipment and infrastructure enhancements in 2011, including $72 million to improve the rail line and $35 million to upgrade railyards and support track.

a third Mexican railroad, Ferrosur, which operated in southeastern Mexico. Having spent several years overcoming legal challenges, Grupo Mexico is currently merging Ferrosur with Ferromex.

Ferromex and KCSM offer cross-border service in partnership with KCS, UP, and BNSF Railway. The U.S. and Mexican railroads pass freight from one jurisdiction to the other at six major border crossings. The U.S. sides of these crossings are in San Ysidro and Calexico, Calif.; Nogales, Ariz.; and El Paso, Eagle Pass, and Laredo, Texas.

Often, the handoff of freight between a Mexican and U.S. railroad involves nothing more than a change of crew because customs import and export paperwork is pre-filed with U.S. and Mexican customs authorities before freight is loaded.

In the case of a UP train crossing onto the KCSM network at Laredo, for example, "the operators get out of the train at the border and hand over the controls to their KCSM counterparts," Commiskey says. "Northbound KCSM trains are handed over to Union Pacific in the same manner for movement into the United States. Employees operating the trains are required to have personal customs documents and paperwork available for entry into the United States and Mexico."

Much of the freight that passes through the international gateways serves the needs of the automotive industry. Pacer, for example, launched its "Mexico Direct" service 20 years ago to serve auto manufacturers with factories in Mexico.

Every major automaker in North America, including GM, Ford, Chrysler, Toyota, and Honda, uses Pacer's services to and from Mexico, says Commiskey. Tier I suppliers that serve those manufacturers make up another significant customer group.

"We also serve a variety of electronics manufacturers, particularly in Tijuana and Juarez, and appliance makers in the greater Monterrey and San Luis Potosi areas," he notes.

TWO-WAY TRAFFIC

Manufacturers in Mexico ship finished product north to U.S. markets, while raw materials move south on rail to supply production lines in Mexico.

"One appliance maker, for example, ships rolled steel and blanks south to be stamped into washing machines and refrigerators," Commiskey says.

"More industry is coming to Mexico," says Bernardo Ayala, vice president, marketing and sales for Mexico at UP. "That is increasing demand for raw materials, as well as the need for transportation services to move those products within Mexico to the ports, or to the United States."

Automakers also comprise the top customer segment for Hub Group's services to and from Mexico. After that, Hub's intermodal volume to and from Mexico consists of what's known as FAK–freight all kinds. "Appliances, food products, beverages, and industrial products make up 60 to 70 percent of our total freight," Hirsch says.

Some manufacturers in Mexico have chosen that country as a more

Disasters and Demand

As natural disasters disrupt supply chains, they influence demand for transportation–sometimes for better, sometimes for worse. Rail transportation in Mexico is no exception.

A failed corn crop had big repercussions for one Mexican railroad and its U.S. partner in 2011. "One of our most important commodities is corn from the state of Sinaloa in northwestern Mexico," says Rogelio Vélez, chief executive officer of Mexican railroad Ferromex.

That region harvests five billion tons of corn in a typical year. "But 90 percent of the crop was lost in February 2011 because of cold weather," says Vélez. As a result, Ferromex saw its agricultural volume drop by nearly 10 percent in 2011.

"The harvest in 2012 also looks very poor, because of drought," he adds.

Because corn is a staple of the Mexican diet, however, the nation looked for supplies elsewhere. "The shortage opened the door for more U.S. corn exports to Mexico," says Bernardo Ayala, vice president, marketing and sales, Mexico, for Union Pacific Railroad (UP). "That gave us a boost at the beginning of 2011."

Ferromex has been working with both UP and BNSF Railway to bring more corn from the United States to Mexico via its efficient "shuttle train" service. "We run 110-car-trains from the U.S. origin point to the destination with no stops," says Vélez. "Workers unload them in less than 24 hours."

Another disaster in 2011 might have caused setbacks for auto manufacturing in Mexico, but did not ultimately reduce demand for rail services. When the March 2011 earthquake and tsunami in northern Japan closed auto parts factories in that country, the resulting shortage of components did affect assembly plants in Mexico. Nissan, for example, halted production in Mexico in April and late May.

But that shutdown simply took the place of Nissan's usual summer hiatus, which it uses for plant maintenance.

"UP's freight volumes haven't dropped; in fact, we're seeing the opposite," Ayala says. "The shutdowns by the original equipment manufacturers in Mexico don't last as long as they did in prior years."

Kansas City Southern keeps trains rolling between the United States and Mexico by investing in infrastructure and security at its intermodal terminals in both countries.

economical alternative to China. The nearshoring trend drives an increasing volume of freight along the corridor that connects Mexico's industrial centers with U.S. intermodal terminals such as the one that Kansas City Southern operates in at the CenterPoint Intermodal Center in Kansas City, says Chris Gutierrez, president of economic development group Kansas City SmartPort.

"Transportation costs from Mexico into the United States are 75 to 80 percent lower than from Asia, so we're seeing a lot more manufacturing distribution coming into that corridor," Gutierrez says.

Besides touting the advantages of the KCSM intermodal corridor to companies that manufacture in Mexico today, KCS and Kansas City SmartPort are also marketing to companies that currently import from Asia, but are good nearshoring candidates.

Agriculture has also helped swell cross-border traffic. "Bartlett Grain and other agricultural commodity traders have consolidation points in Kansas City and move their freight to Mexico," says Gutierrez.

Along with those major customer segments, some less-obvious industries are boosting volumes on Mexican rail lines. "The growth driver for Ferromex in 2011 has been new railroad cars that are built in Mexico," says Vélez.

Volume in that category surged 88 percent in 2011. Loads of glass bottles increased by 86 percent.

Ferromex parent Grupo Mexico, which operates a large copper mine in Sonora, Mexico, was responsible for another volume jump. In 2010, the mine reopened after a three-year strike.

"Sulfuric acid shipments resumed in 2011, driving Ferromex's 58-percent surge on that commodity," Vélez says. The railroad transports the sulfuric acid, a by-product of copper extraction, for export to the United States and Chile.

Another important factor in the growth of Mexican rail is the emergence of the Port of Lázaro Cárdenas, on the Pacific Coast, as an alternative to container ports on the U.S. West Coast. "Lázaro Cárdenas is largely a bulk port, but in the past four or five years it has expanded its container activity," says Gutierrez.

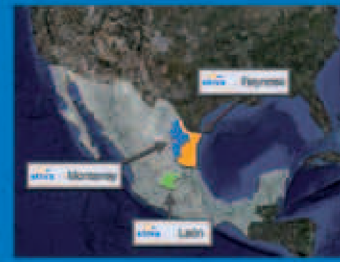
NEW CONTAINER MAGNET

Hutchison Port Holdings opened the first container operations at Lázaro Cárdenas in 2007. "Since then, Lázaro Cárdenas has been the fastest-growing port in North America," says Patrick Ottensmeyer, executive vice president, sales and marketing at KCS, whose sister railroad KCSM provides the only rail service at the port.

Lázaro Cárdenas can currently handle approximately one million 20-foot equivalents (TEUs), and that figure is expected to grow in the long run to 2.2 million to 2.5 million TEUs.

Mexico has announced plans to name a second container concession at Lázaro Cárdenas, which ultimately would offer similar capacity to the Hutchison facility.








Balancing Act

Opinions vary on the degree of balance in rail traffic between the United States and Mexico.

"It's fairly balanced: about 60 percent southbound into Mexico, and 40 percent northbound into the United States," says Bernardo Ayala, vice president, marketing and sales for Mexico at Union Pacific (UP) Railroad.

But the picture looks different for intermodal service provider Hub Group. "Mexico is a three-to-one market for intermodal transportation," says Paul Hirsch, the company's vice president of Mexico operations. "Most of our largest customers move freight northbound."

That imbalance creates a challenge. If Hub's northbound containers reach their U.S. destinations and find no freight to take back, how can the company cost-effectively move those empties south to reload?

The solution lies in Hub's partnership with UP. "UP helps us work on rate issues with specific southern shippers so we can make sure we're competitive," Hirsch says.

UP and Hub also collaborate on optimizing empty container transportation. UP takes containers to Dallas and Houston, where demand for inbound intermodal service is greater than demand for outbound service.

"Instead of shipping those empties to California where they're needed," Hirsch says, "we reposition them in a Mexico market such as Monterrey, load them, then ship them to California."

Kansas City SmartPort has worked with KCS since the late 1990s to market the Lázaro Cárdenas-to-Kansas City rail corridor. "We pushed both the U.S. importers and Asian exporters to consider the corridor not only for their freight moving into Mexico, but freight coming into the United States," Gutierrez says.

That strategy seems to be paying off. "As of December 2011, our container traffic through Lázaro Cárdenas was up 31 percent through September," says Ottensmeyer. "With continued expansion of container operations at Lázaro, KCS should post solid double-digit volume growth for an extended period."

Along with improving its capacity to move containers, Lázaro Cárdenas will open a new bulk handling facility in 2012. "This facility will increase the volume of heavy, bulk commodities, such as coal and iron ore, that could move through the port," Ottensmeyer says.

Whether containers are moving to and from the ports, or within Mexico, intermodal transportation still offers railroads and intermodal service providers a great deal of opportunity.

"The United States is a mature intermodal market," Hirsch says. "Shippers understand the pros and cons, the rate structure, and the seasonal peaks."

Not so in Mexico, where most freight still moves by truck. "Carriers and service providers still have plenty of market share left to capture by selling the economies of intermodal transportation," he notes.

The improvements Mexican railroads have made to their infrastructure constitute a big selling point. Shipping by rail in Mexico used to be an adventure. "A shipment could take 10 days or 30 days to get to its destination," says Hirsch. "The carrier wouldn't be able to tell you when it would arrive."

Commiskey cites the upgrades KCSM has made to its terminal in Monterrey as another significant improvement.

"In 2007, the ramp in Monterrey was inadequate for the market," he says. Both the road leading into the facility and the ramp itself needed to be upgraded, and the facility needed to be modernized.

All that has changed. "The ramp is completely paved," Commiskey says. "KCSM added a line of track, so there is plenty of room to park equipment, and new lifts speed unloading. The whole terminal is surrounded by chain-link fence and barbed wire, so it is very secure."

The railroads have been making similar upgrades throughout Mexico, and those investments have produced significant benefits for shippers.

Ferromex spent $330 million on new equipment and infrastructure enhancements in 2011, including $72 million to improve the rail line and $35 million to update railyards and support track.

"We've invested $2.1 billion in infrastructure upgrades in the 13 years we've been operating," Vélez notes.

BETTER SECURITY

Along with upgrading rail infrastructure, Mexican railroads and their U.S. partners have been improving security, helping to ensure that freight moving within Mexico or across the border arrives undamaged and free of contraband.

"Both KCSM and Ferromex work hard to ensure that safety procedures in Mexico are equal to the ones in the United States," says Ayala at UP. Those safety measures include using x-ray machines to examine railcar contents, dogs that search trains for hazardous items, and high-speed cameras that monitor passing cars for open doors or broken seals.

If contraband is detected on a train, customs officials can isolate individual intermodal containers for inspection.

KCSM boasts a strong security record.

"In 2010, the customer claims rate for theft, vandalism, or accidents for all shipments moving on KCS in Mexico was 0.02 percent," Ottensmeyer says. "That means 99.8 percent of all loads we transported were moved without a customer claim."

The multiple layers of safety and security provisions at KCSM include a focus on maintaining train velocity, which reduces the chance of incidents.

"The trains are really moving now," says Hirsch. "They don't stop, so no one can break into a train at rest."

Whether in motion or stopped, double-stacked intermodal containers loaded into gondola cars present a formidable obstacle to criminals. One container rides low in the car's well, making it impossible to open the door more than three feet, and the second car rides on top. "Most thieves will target trucks, rather than climb to the top of 20-foot-tall trains with a blowtorch to try to break in," Commiskey says.

Criminal activity in Mexico has made rail carriers' security challenges tougher in recent years. At Ferromex, recent initiatives to boost security include replacing private security guards—who are not allowed to carry guns—with armed Federal Police officers. Those officers protect the trains both in-transit and in the yards.

"We pay for the security that they provide us," Vélez says. But Ferromex has not been able to boost the number of armed officers as quickly as company officials would like.

While the safety of shippers' freight is of paramount importance, Ferromex also looks to the police to safeguard its own operations. Particularly challenging to the railroad were thieves in the state of Zacatecas who were stealing diesel from engines.

Not only did Ferromex lose money on the fuel, but the thefts interrupted operations. "Fifteen or 20 locomotives were stranded there because we had to refuel them," Vélez says. Since federal officers started protecting the equipment in Zacatecas in September 2011, those losses have stopped.

Rail transportation in Mexico still enjoys a great deal of growth potential. Rail carries about 42 percent of freight in the United States and 60 percent in Canada, but only 26 percent in Mexico. "If we concentrate on boosting that share to 35 or 40 percent," says Vélez, "our industry will gain real volume growth opportunities."

ON THE DOCKET

Key legislative and regulatory items on Capitol Hill will have a bearing on transportation and logistics in 2012 and beyond. Here's a look ahead so you can comply – or adjust – to keep your supply chain running smoothly.

By Joseph O'Reilly

The second session of the 112th Congress could have an interesting impact on transportation and logistics, as election-year politics dictate policy.

President Obama has already indicated that a "do-nothing" Congress is responsible for a continuing economic slump, and that his administration will stump on that platform in its re-election campaign. Partisan senators and representatives seeking a majority at the polls and in their respective chambers will likely face an uphill challenge convincing constituents they and their parties deserve a vote of confidence beyond 2012.

If the past few years are any indication, there's little assurance Congress will "do-anything" to repair its reputation. They may try to propose and reintroduce legislation and resolutions as a matter of due process, but whether Congress is capable or willing to push them through—and risk the wrath of voters—remains to be seen.

There is one certainty, however. Much of the early focus in this year's Senate and House chambers will be directed at completing a long-overdue multi-year highway reauthorization bill before the end of the current extension in March 2012. Accomplishing this goal is critical, given the state of U.S. roads and bridges, questions about how and how much federal funding will be appropriated, and current job growth uncertainties.

In the freight sector, intrigue extends beyond the legislative playing field. The Federal Motor Carrier Safety Administration's (FMCSA) CSA "Now" and Hours-of-Service (HOS) rules *(see Trends, page 54)* have commanded the most attention in the past year. There will be continuing discussions—and with HOS, potential legal wrangling—as these two highly charged regulatory lightning rods continue on their respective paths from enactment to enforcement.

All these matters notwithstanding, a number of less-immediate or publicized Congressional actions and lingering regulatory and administrative measures are also worthy of attention in 2012. A few are law and in the process of rule-making and enforcement; some are new and bound for debate; others are reiterations or companions of dead bills now circulating under new aliases.

Here's a rundown of agenda items at stake in 2012.

Fighting Fraud in Transportation Act of 2011, H.R. 2357

SPONSOR: Rep. Frank Guinta [R-NH]

OVERVIEW: To increase the effectiveness of federal oversight of motor carriers.

As a follow-up to the Motor Carrier Protection Act of 2010, which was referred to committee but eventually sputtered out, this latest iteration addresses many of the same problems afflicting the motor carrier industry with regards to brokerage fraud. The bill specifies that the federal freight broker's bond amount be increased from $10,000 to $100,000.

Trucking companies have long fought the presence of rogue freight brokers who operate with little oversight and give legitimate transportation brokers and carriers a bad name. With wide support from the Owner-Operated Independent Drivers Association, Transportation Intermediaries Association, and American Trucking Associations, this legislation would extend the bond requirement to freight forwarders; increase requirements for any company looking to secure brokerage authority; establish penalties for violations of broker regulations; and dictate strict guidelines for companies that provide brokers with surety bonds. The legislation is timely given a looming capacity shortage and the increasing value proposition of freight brokers.

The Commercial Motor Vehicle Safety Enhancement Act of 2011, S. 1950

SPONSOR: Senator Frank Lautenberg [D-NJ]

OVERVIEW: To improve commercial motor vehicle safety and reduce commercial motor vehicle-related accidents and fatalities.

The legislation takes steps to ensure only the safest motor carriers and drivers are able to enter the industry, improve the safety laws governing current carriers and drivers, and increase FMCSA's enforcement tools to remove unsafe drivers and carriers. Specifically, the bill includes provisions to mandate commercial use of electronic on-board recorders, enhance the Department of Transportation's (DOT) registration process for drivers with regards to safety training and proficiency, and direct the DOT to support FMCSA's implementation of CSA.

Railroad Antitrust Enforcement Act of 2011, S. 49

SPONSOR: Sen. Herbert Kohl [D-WI]

OVERVIEW: To amend the federal antitrust laws to provide expanded coverage and to eliminate exemptions from such laws that are contrary to the public interest with respect to railroads.

The Railroad Antitrust Enforcement Act is a consumer protection bill that does away with special antitrust exemptions that allow U.S. freight railroads to avoid competition and set their own rates. Removing the special antitrust exemptions, supporters of the legislation argue, would mean railroads will be required to compete on a more even playing field.

Surface Transportation Board Reauthorization Act of 2011, S. 158

SPONSOR: Sen. John Rockefeller [D-WV]

OVERVIEW: To reauthorize the Surface Transportation Board.

This legislation is the resurrected Surface Transportation Board (STB) Reauthorization Act of 2009, which created a stir in the media and among railroads when Senator Rockefeller proposed making the STB an independent authority sanctioned to mediate disputes between railroads and shippers, as well as monitor operational performance on the tracks.

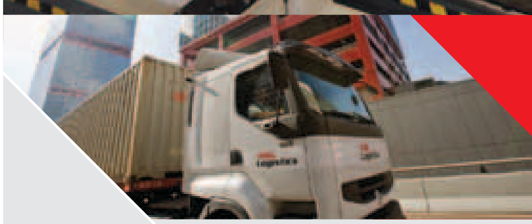
The latest version carries many of the same traits. It expands the membership of the STB from three to five; clarifies the powers available to protect "captive" rail customers from railroad market power; and overturns some regulatory rulings that prevent rail customers from gaining access to competing railroads.

Safe and Efficient Transportation Act (SETA), H.R. 763, S. 747

SPONSORS: Rep. Michael Michaud [D-ME] and Sen. Michael Crapo [R-ID]

OVERVIEW: To amend Title 23, United States Code, with respect to vehicle weight limitations applicable to the Interstate System.

The U.S. federal weight limit has been set at 80,000 pounds since 1982—forcing



FDA Food Safety Modernization Act, H.R. 2751

SPONSOR: **Rep. Betty Sutton** [D-OH13]

OVERVIEW: **To amend the Federal Food, Drug, and Cosmetic Act with respect to food safety.**

It has been more than one year since President Obama signed the FDA Food Safety Modernization Act (FSMA) into law, but the information-sharing process continues to unfold. The focus of the bill is instructing the FDA on how to better manage and respond to product recalls, as well as educate industry. The latter has been a point of emphasis over the past year. The FDA has actively engaged various industries to discuss how new regulations will impact their businesses and what they need to do to increase traceability and transparency, as well as enforce compliance.

Moving forward, the FDA is challenged with enforcing the Foreign Supplier Verification Program by Jan. 4, 2013, which mandates importers verify that offshore suppliers comply with specified standards for harvesting, handling, and transporting raw fruits and vegetables.

Critics of the new regulation argue that the FDA doesn't have the staff to test everything that comes in, and instead will rely on third-party auditing companies, many of whom are paid by the foreign food suppliers themselves.

The FSMA may help food companies such as Minute Maid handle product recalls.

shippers that reach this limit with space left in their trailers to use more trucks and fuel than necessary. SETA's goal is to make truck transportation safer and more sustainable by giving states the ability to adjust federal weight limits on interstates within their borders.

Under SETA, each state could set interstate weight limits of up to 97,000 pounds—giving shippers the ability to use more truck space. The higher weight limit would only apply to trucks equipped with six axles, instead of the typical five. Without making the truck any larger, the additional axle maintains safety specifications, including stopping capability and current weight per tire.

Supporters believe SETA provides incentive for Congress as it begins developing a new Highway Reauthorization Act. But even with the promise of better asset utilization, less congestion, and reduced carbon emissions, some observers are wary of the impact heavier loads will have on already deteriorating roads—especially without a transportation infrastructure plan in place to fix and maintain existing over-the-road networks.

Safe Highways and Infrastructure Preservation Act (SHIPA), S. 876, HR 1574

SPONSORS: **Sen. Frank Lautenberg** [D-NJ] **and Rep. James McGovern** [D-MA]

OVERVIEW: **To amend Titles 23 and 49, United States Code, concerning length and weight limitations for vehicles operating on federal-aid highways.**

As a foil to the Safe and Efficient Transportation Act, SHIPA proposes to freeze national truck size and weight limits on the U.S. interstate highway system.

H.R. 756

SPONSOR: **Rep. Peter DeFazio** [D-OR]

OVERVIEW: **To direct the Secretary of Transportation to prescribe standards for the maximum number of hours that a commercial motor vehicle operator may be reasonably detained by a shipper or receiver.**

This legislation intends to protect independent truck drivers and improve the productivity and safety of moving goods by truck. At issue is detention time, and whether there should be a maximum number of hours drivers wait at loading docks before they are compensated. H.R. 756 requires the DOT to study detention time, and issue regulations on the maximum number of hours a driver may be reasonably detained without compensation.

Implementing Recommendations of the 9/11 Commission Act of 2007, H.R. 1

SPONSOR: **Rep. Bennie Thompson** [D-MS]

OVERVIEW: **To provide for the implementation of the recommendations of the National Commission on Terrorist Attacks upon the United States.**

One of the provisions of this legislation, signed into law by President Bush in 2007, was 100-percent screening of all freight on passenger aircraft entering the United States. While many in the air cargo industry and government questioned the feasibility of such measures—given time and cost concerns—the deadline for compliance was Dec. 31, 2011.

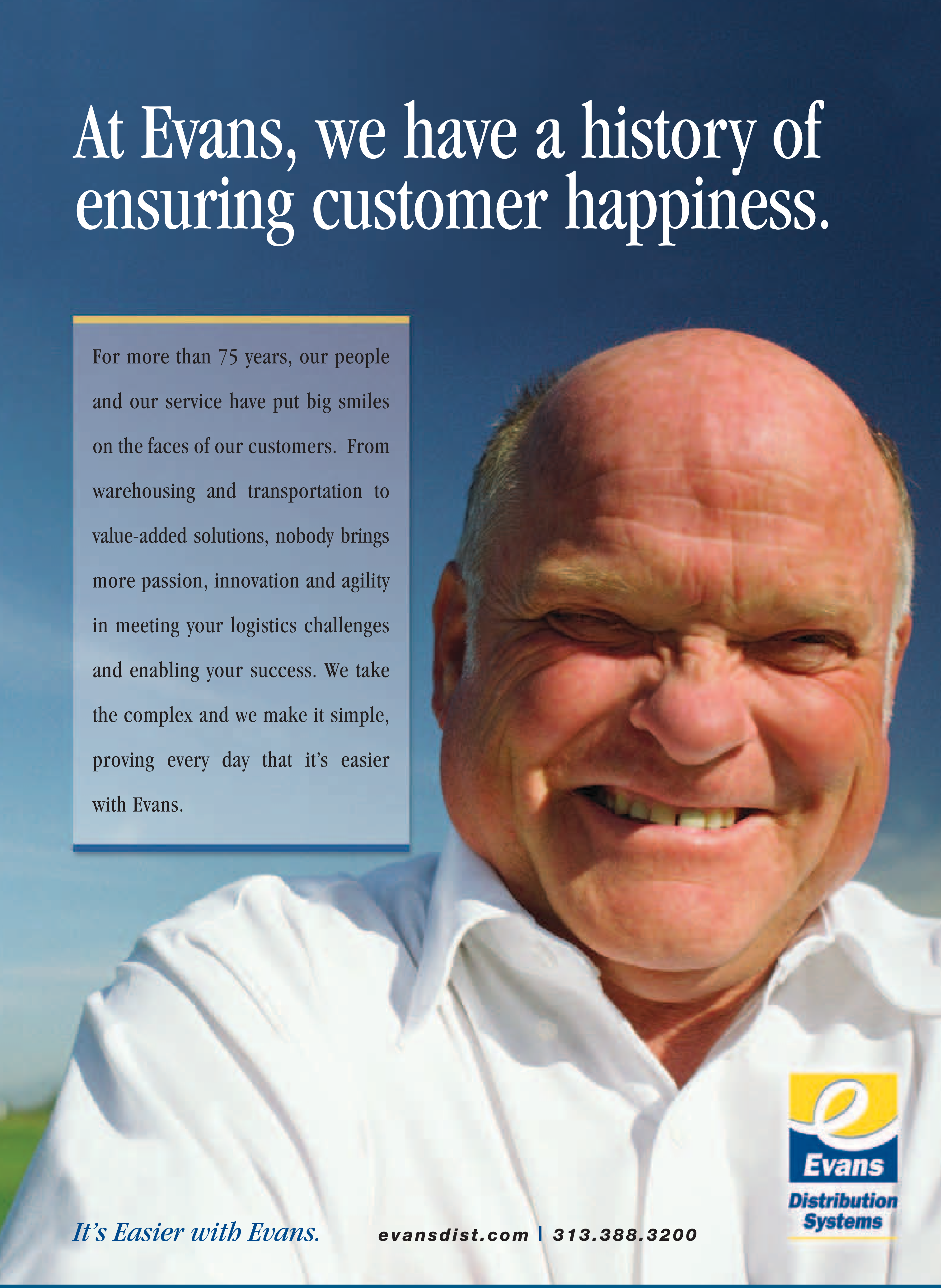
The Transportation Security Administration (TSA) informed freight shippers that it would not require all air cargo bound for the United States to be screened by that date, however—and, as of press time, it had not set a new deadline. Democratic sponsors of the bill are now calling on the TSA to explain this blip in due process, and determine when 100-percent screening will, in fact, be finalized.

The Clean Ports Act of 2011, H.R. 572, S. 2011

SPONSORS: **Rep. Jerrold Nadler** [D-NY] **and Sen. Kirsten Gillibrand** [D-NY]

OVERVIEW: **To provide port authorities more power.**

The government's follow-up to the Port of Los Angeles' stalled "Clean Ports" effort—which is trying to regulate truck emissions at the port—would give ports more authority over drayage operations, such as banning owner/operators or requiring all drivers be employees of companies. More specifically, it would give port authorities the power to regulate truck prices, routes, and service in order to improve pollution, congestion, and safety. ■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Managing the Spirited Supply Chain

Raise a glass to the supply chain strategies that keep wine, beer, and spirits flowing.

by Merrill Douglas

Quick shifts in demand, the fragile nature of many products, and a kaleidoscope of government regulations complicate the alcoholic beverage supply chain.

The market for wine, beer, and spirits is both a global and a regional one. The category includes products that cross the seas to reach consumers, as well as craft products that are popular where they're made, but possibly unknown even 200 miles away.

"We sell products from all over the world, and each one has a different supply chain," says Ward Chaplin, senior director of supply chain at Southern Wine and Spirits of America, a leading U.S. distributor with operations in 35 markets.

To add to the complexity, the industry encompasses beverages marketed for mass consumption, and top-shelf spirits and fine wines that sell for hundreds of dollars per bottle.

In the United States, the law divides the supply chain for alcoholic beverages into three tiers. The first consists of producers: wineries, breweries, distilleries, multinational brand owners, and importers that represent products within the country.

The second tier consists of wholesale distributors, which must establish separate operations in each state where they sell. The third tier are retailers, including liquor stores, grocery and convenience stores, and restaurants, pubs, and other establishments that serve alcohol for on-premise consumption.

BALANCING SUPPLY AND DEMAND

As products flow through those tiers in the United States, or through different networks abroad, one challenge that vendors and suppliers face is how to stay ahead of fluctuating consumer demand.

"No one wants to be overstocked," says Geoffrey Giovanetti, managing director of the Wine and Spirits Shippers Association in Reston, Va. Keeping too much inventory—particularly high-priced spirits and wines—ties up capital, and beer has a finite shelf life.

But a too-lean inventory may cause problems, as well. "If a product suddenly becomes popular, you risk not being able to provide it," Giovanetti says.

Demand can indeed soar. The U.S. market for wines from Argentina, for example, has grown tremendously in recent years, and competition among producers has intensified, says Mara Gonzalez, director of purchasing at Vino Del Sol, a Corinth, Miss.-based importer of Argentinean wines.

As new wines hit the market, it's important to keep a careful eye on supply and demand. "Otherwise, it can come as a big surprise when a product's sales take off," Gonzalez says.

Because an order placed with an Argentinean winery typically takes 60 days for delivery to the United States, bringing the right products to market exactly when they're needed is a formidable challenge.

THE ART OF CRAFT

Demand for novel products also makes the beer market interesting. When a new craft beer hits the scene, consumers line up to try it, says Kevin Brady, president and CEO at Satellite Logistics Group, a Houston-based logistics company that serves the beer industry.

Keeping up with demand for Argentinean wines such as Zolo Torrontés can prove challenging for importers because of long delivery times to the U.S. market.

To keep up, distributors continually add new products to their inventories. "That market growth has created an explosion in the volume of stock-keeping units (SKUs) distributors have to service, manage, order, and rotate at retailers," Brady says.

Craft breweries that capture the interest of consumers outside their own backyards face the obstacles that come with rapid growth.

"As they saturate their local markets, craft breweries examine how to expand regionally or cross-country," says Brady. "Then they have to consider other nodes in their distribution network, and possibly expand carrier capacity to serve more remote markets."

TREND TRACKING

Pop culture and the whims of fashion may pressure suppliers of spirits, as well. When a celebrity touts the latest flavored vodka, for example, those bottles may start flying off the shelves.

"We've been in situations where the producer hasn't been able to keep up with demand," says Giovanetti. Then, just as quickly, the public starts chasing the next fad.

In the metro New York market, demand for specific drinks may change from year to year as the city draws tourists from different regions.

"In 2011, South American travel to New York doubled," says Jon Donnelly, director of purchasing at Empire Merchants in Brooklyn, N.Y. The company distributes in the five boroughs, Long Island, and Westchester. "That could be a factor in the growth of pisco—a brandy from Peru and Chile that became popular here in 2011."

The economy also creates market churn, as consumers with more or less money to spend adjust their drinking patterns. The changes have been particularly dramatic in the current economic cycle. There have been shifts in at-home consumption and visits to restaurants and bars, as well as in consumption of beer, wine, and spirits.

While supporting both steady and changing demand, shippers of alcoholic beverages must be careful to safeguard the product en route. Spirits can withstand just about any sort of weather, but beer and wine are more particular.

TEMPERATURE CONTROL

"Beer freezes easily because it doesn't have a very high alcohol content," says Horst Mueller, global director, drinks logistics at global third-party logistics (3PL) company Kuehne + Nagel. "And wine is a very sensitive product."

Because many higher-end wines are made in small quantities, a spoiled shipment may be impossible to replace.

Heat also poses a problem. Giovanetti, whose organization manages international shipments for its members, recalls the time a carrier transporting containers of wine from the Port of Long Beach, Calif., to Phoenix sent the trucks across the desert in the heat of the day instead of moving them at night.

"They arrived in terrible shape," he says.

The Vintner Group's distribution center in Ashland, Va., follows federal Customs-Trade Partnership Against Terrorism (C-TPAT) security procedures, which allow the distributor's shipments to forgo some inspections at port, resulting in fewer delays during transit.

Where Yee-Haw Meets Olé

THE BEST WAY TO MEXICO

Eagle Pass, Texas and Piedras Negras, Coahila, Mexico together operate as a center for transportation, trade, commerce and manufacturing between the United States and Mexico. Two international bridges accommodate vehicular traffic, including one bridge devoted exclusively to commercial truck traffic. **Eagle Pass serves as one of the very few international border crossing points for rail.**

Eagle Pass International Bridge I connects the Eagle Pass downtown shopping centers with the Piedras Negras downtown marketplace via a two-lane bridge with pedestrian walkways. This allows the commuting public to enjoy the variety of Mexican artwork, crafts, shopping, dining and musical entertainment.

Camino Real International Bridge provides six lanes, three in each direction. The bridge also has two six-foot sidewalks for pedestrians. The Camino Real International Bridge makes a convenient crossing for commercial truck traffic into Piedras Negras with access to Mexico's central super highway connecting to Mexico City.

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Along with temperature-controlled containers and warehouses, Kuehne + Nagel uses a thermal container liner to protect sensitive beverages. "It's a six-sided aluminum bag with insulation between its walls," says Chaplin, whose firm uses Kuehne + Nagel's ocean freight forwarding services. "We put the bag inside a container–it fits like a glove–then put the pallets in and zip it closed."

Because it's expensive to use temperature controlled containers for long ocean voyages, shippers moving wine or beer to northern markets in winter often use geography to their advantage.

"We bring cargo into warm-weather ports, then transload it into heated trailers," says Giovanetti. "Any Customs delays occur in the milder climate. Then we take the products right to the door under temperature control."

RULES, REGS, AND SECURITY

Because many alcoholic beverages come from abroad, Customs and security regulations create a particular challenge for importers and distributors.

"Factors such as U.S. Customs and Border Protection's Importer Security Filing regulation, changes in drivers' hours of service, and weight restrictions per container–which vary locally–demand flexibility," says Chaplin.

In the past, for example, a shipper didn't file information with U.S. Customs until the inbound cargo was five days from the U.S. port.

"Now the government wants to know the container's contents before the box physically pulls into the secured containeryard at the port of origin," Chaplin says. "If shippers don't provide data on all the products' sizes, marks, label registrations, proofs, gallons, and alcohol content, they can't even make a reservation to put the goods on the boat."

The federal Customs-Trade Partnership Against Terrorism (C-TPAT) program demands continual attention because the government expects C-TPAT participants to improve

THE FINE WINE SUPPLY CHAIN

Supply chain practices that work for a bottle of wine worth $15 or $50 won't cut it for a $500 Bordeaux, says James Miles, director at Liv-ex, a London-based online exchange for fine wines.

The wines that most of us enjoy generally move from vineyard to glass within one year. And for the most part, they travel in a straight line from producer to distributor to retailer.

But wines at the highest end of the market take a slower and more complex path. "Typically, top Bordeaux wines aren't ready to drink for 10 years or more after they are produced, and often they can last for up to 50 years," Miles says. That Bordeaux or other high-value wine might change hands many times before someone finally pulls the cork.

And therein lies the problem. "In order to recognize that it is in your possession, the stock has to move from the supplier's warehouse to your warehouse," Miles says. That system is expensive, and poses risk to the product.

The fine wine market is ultra-global: a merchant in London might sell to a collector in the United States, who later sells the same stock to someone in China. Repeated transport makes damage a particular concern.

Moving wine from place to place also introduces doubt about provenance–the certainty that the wine in the bottle is the same product advertised on the label. "People are paranoid about fraud in the wine market, because the value of the product is so high," Miles says.

Long trips also tie up capital because buyers generally pay on delivery. A pallet of Chateau Lafite Rothschild, for example, might be worth $25,000 to $500,000. "You don't want that pallet waiting for trucks to arrive and taking two weeks or one month to be transferred from one warehouse to another," Miles says.

Hoping to create a more efficient supply chain for fine wines, Miles' company has developed a market mechanism that operates like a contemporary stock exchange. Customers using Liv-ex's online system own wine that resides in multiple warehouses. When ownership changes, instead of moving the product, Liv-ex simply makes a transfer in its database.

"Only when the case actually needs to be consumed do you instruct the warehouse to move the stock and deliver it," Miles says.

To create a common language for traders working on disparate information systems, Liv-ex has developed a universal product code called L-Win. Ultimately, the streamlined trading system will save a great deal of money for businesses that trade in fine wines. "The fine wine supply chain is very specialized," Miles notes, "but it's a $4-billion market."


THE SHIFT IS ON
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their performance continually, says Gene Edwards, logistics manager at The Vintner Group, an Ashland, Va., distributor of fine wines and craft spirits.

Under the voluntary C-TPAT program, shippers adhere to a stringent set of security standards in exchange for undergoing fewer security screenings than non-participants.

"We've been C-TPAT-certified for a few years, and Customs has audited us twice," Edwards says. During those audits, the company must demonstrate that it is following all the security-related procedures it agreed to implement.

"They look at our documents and manuals, and watch employees work," he says. "Each year, they provide feedback on the elements and processes they'd like us to change."

Vino Del Sol has seen increased transit times because of security initiatives at ports. "At certain ports, every container may be inspected," Gonzalez says. That can add as much as four days to a container's stay in port.

BULKING DOWN

Wine, beer, and spirits are heavy, and so are the bottles in which many of those products are sold. So weight poses a special challenge for beverage logistics.

A shipper loading bottled product in a trailer or container bound for U.S. highways must fill as much of that box as possible without incurring overweight charges, says Gene Edwards, logistics manager at The Vintner Group, a distributor of fine wines and craft spirits based in Ashland, Va.

"You can reach the weight limit in a 40-foot container before you fill out the cube," he notes. "You have to make sure you get as close as possible to the weight limit without putting the drayage service at risk for being overweight."

One strategy for moving more wine in fewer containers is to ship in bulk for the longest part of the journey, then bottle the product for distribution. In the United States, brand owners – generally large wineries – do the bottling at their own facilities, says Horst Mueller, global director, drinks logistics, Kuehne + Nagel, a global logistics services provider. "Europe has a contract bottling system in which third parties bottle private labels for producers."

To ship wine in bulk, Kuehne + Nagel places flexible plastic tanks, called KN Blue Tanks, inside 20-foot containers. Because the empty tanks don't weigh much and take up little space, it's easy to fly them wherever a customer needs them. But finding containers to transport the filled tanks can be a problem.

The regions that ship the most bulk wine these days – particularly South America and Australia – also happen to be high-demand regions for 20-foot containers. "One of our top priorities is finding suitable equipment for these products," Mueller says.

Flexible plastic also offers a weight advantage in distribution. AstraPouch North America, based in Penfield, N.Y., markets a 1.5-liter plastic package for wine and spirits. The AstraPouch is designed to provide an easy-to-carry product that consumers can enjoy even where glass bottles aren't allowed. For shippers, the product also offers cost and environmental benefits.

"An AstraPouch filled with liquid is 33-percent lighter than a filled 1.5-liter glass bottle," says Dave Moynihan, president, AstraPouch. "A shipper moving filled AstraPouches can get many more units into a trailer before hitting the weight limit than a shipper moving filled 1.5-liter glass bottles."

The difference is even greater when shipping the packaging to a bottling plant. Empty AstraPouches are flat, so a trailer can hold far more of them than it can glass bottles. "One trailer of AstraPouches is equal to about 14 trailers of glass," Moynihan says.

Because it takes fewer trucks to ship AstraPouches than to ship the same number of bottles, the pouches cost less to ship and also reduce a product's carbon footprint.

AstraPouch North America currently serves 12 customers, which use the packaging for products such as Glenora Chillaxin' Red wine, Malibu Tropical Sea Breeze rum cocktail, and Indulge wines.

AstraPouch's flexible plastic packaging offers consumers portability, while giving shippers a weight advantage during distribution.

GETTING OUT OF THE COUNTRY

For imported wine, beer, and spirits, issues related to the country of origin can produce idiosyncratic kinks. For Vino Del Sol, one challenge arises from the fact that steamship lines have cut service from Argentina, consolidating much of the importer's South American activity in Chile. Argentina's ports are still an option for shipments to the East Coast. But because Vino Del Sol's only warehouse is in California, most of its volume—except for some direct-to-customer shipments—now ships from Chile.

"There's a huge mountain chain between Argentina and Chile," Gonzalez points out. And crossing the Andes in winter is no simple feat. "Sometimes three or four weeks go by when no trucks pass," he adds.

Carriers also offer fewer direct services than they used to, choosing instead to transfer containers at intermediate ports. Those transshipments are reasonably efficient.

"It's rare that a container is left for more than two or three days without getting on the next vessel," Gonzalez says. "But you increase the risk of missing a feeder vessel or exposing containers to the sun."

Each new wine-growing region that comes into vogue presents distinct logistics challenges. In New Zealand, for example, vineyards are located inconveniently far from major ports.

"Some suppliers have compensated by loading the wine into bulk tanks and sending them to bottling plants closer to the ports," Giovanetti says. "And, of course, there are small feeder vessels that serve the various ports. But it seems the more exotic the wine, the farther away it is from Auckland and the shipping area."

As ocean carriers increase capacity in some lanes, many have cut back on other services, particularly from the North Atlantic and the Mediterranean to the United States.

"Over the past few years, more of our cargo has been pushed from one booking to the next," Donnelly says. The resulting delays make it challenging to maintain proper inventory levels.

Conditions in other industries also cause capacity problems. For example, when a major auto parts plant in northern California closed a few years ago, it spelled bad news for beverage distributors.

Trailers filled with parts for the plant used to pour into the area. Distributors took advantage of the empty trailers to ship wine from producers in the region. "We've lost all those empties," Donnelly notes.

With fewer empty trailers available, Empire has increased its use of railcars to move the equivalent of three to four trailers of wine on one conveyance.

Several years ago, importers shipping wine out of Chile found themselves fiercely competing for vessel space.

"Chile was exporting so much food that steamship lines were giving priority to refrigerated containers," Gonzalez says. "Shippers moving dry or insulated product were bumped repeatedly. The average delay was three weeks."

SMART SOLUTIONS

Given the challenges they face, shippers of alcoholic beverages have to work particularly hard and smart. For Gonzalez, supply chain management includes carefully monitoring inventories held by her suppliers in Argentina, her own company, and all the distributors that make up her customer base.

Her most important tool in this effort is a business intelligence solution that provides a quick, two-dimensional picture of current inventory. "I need a vertical analysis—what's in Colorado, for example, by item," she says. "But I also need a horizontal analysis, looking at what is happening with each of my items across the board."

At Empire Merchants, collaboration helps the company maintain the flexibility it needs to overcome logistics obstacles and stay abreast of ever-shifting customer demand. Donnelly works with internal sales managers to coordinate sales and operations planning.

In light of recent pressures, planners are looking at a longer horizon than in the past. "We might have once planned a three-month order cycle, but now we look as far out as four or five months."

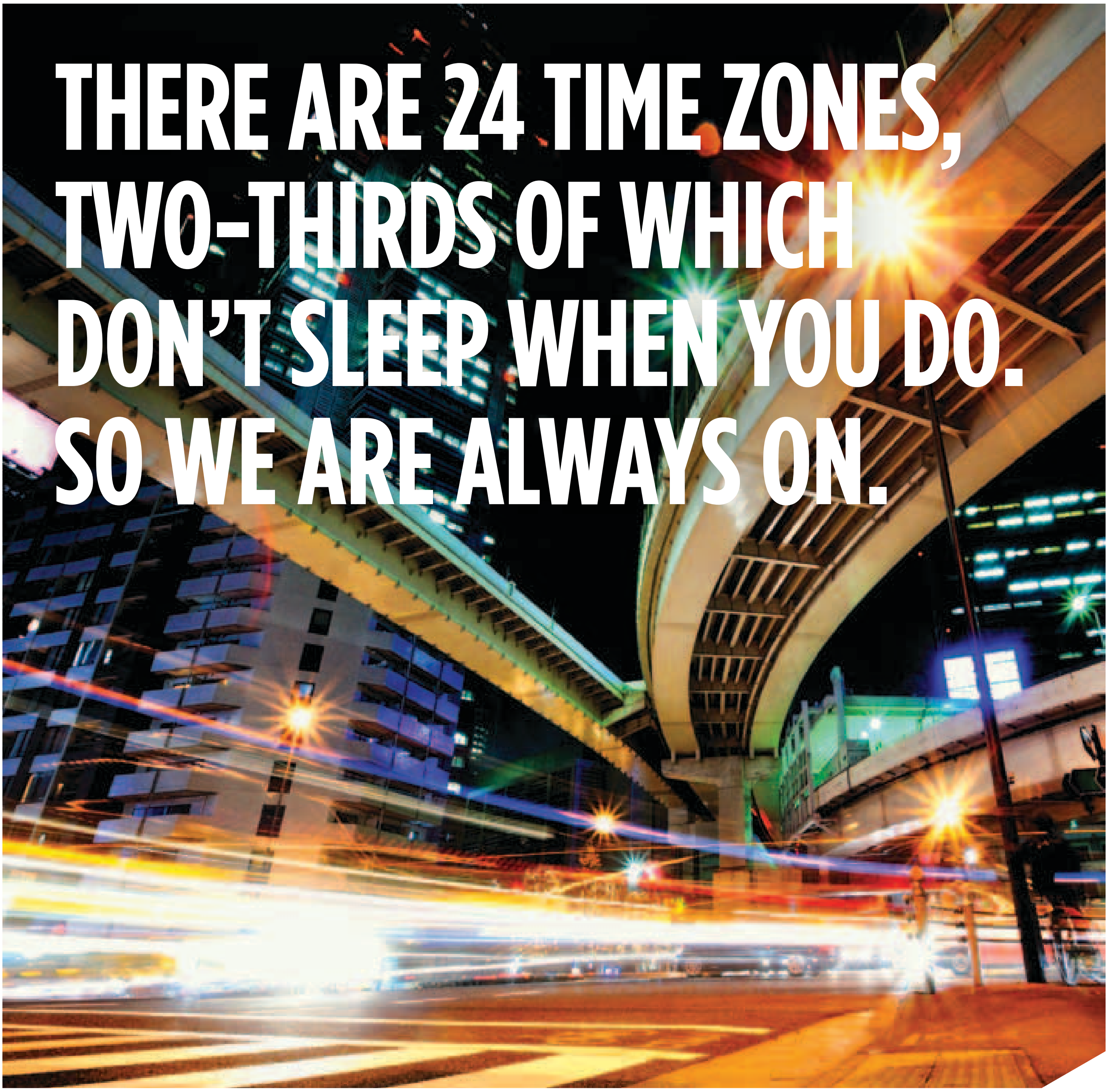
Empire also is coordinating more carefully with suppliers to keep abreast of upcoming events such as price changes.

Solid partnerships with service providers are also key. "Southern Wine's relationship with Kuehne + Nagel is a mutual process of continuous improvement," says Chaplin. "We are stronger together than individually."

By sharing information—through Kuehne + Nagel's Web-enabled KN Login system and other means—the two companies eliminate uncertainties along every step of the supply chain.

"If any type of situation arises, Kuehne + Nagel has a contingency plan to make sure product is delivered on time," Chaplin adds.

Thanks to these and other best practices, the drinks keep flowing, and consumers can raise a glass in salute. ■



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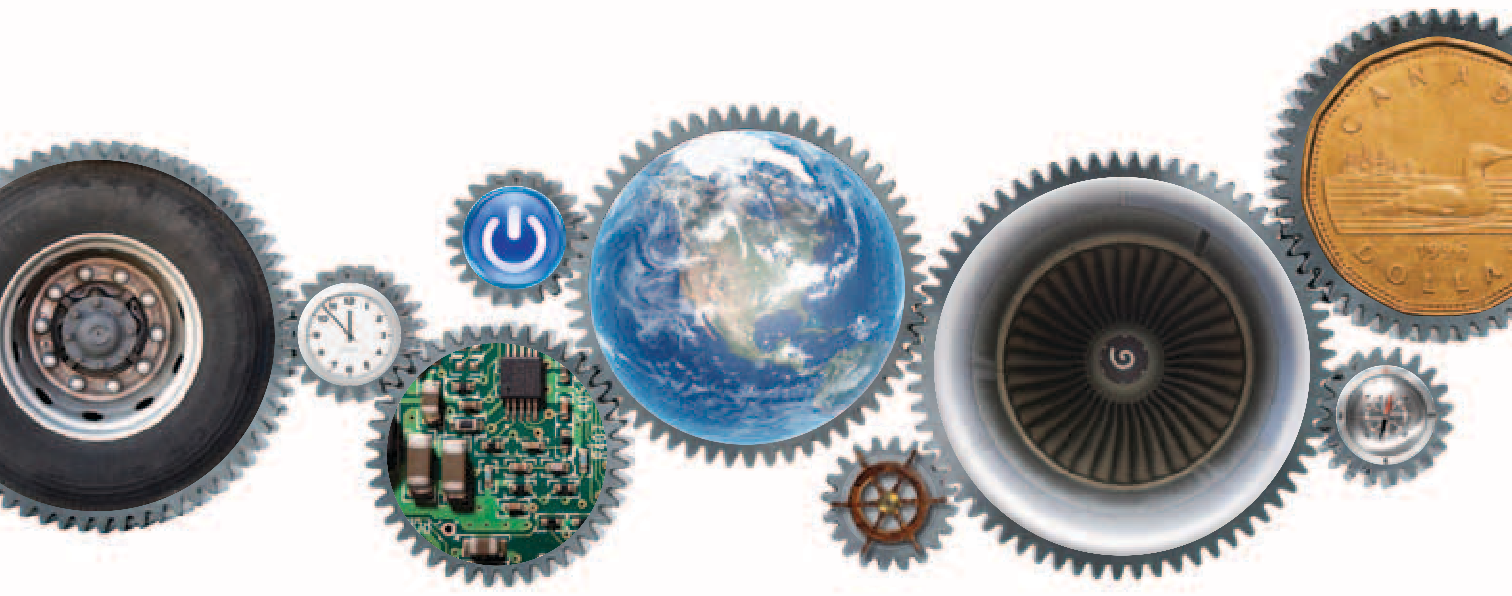

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Florida Ports: **Bright Outlook for the Sunshine State**

The promise of complementing existing Latin American trade volumes with a surge in Asian imports has Florida on the path to becoming a cargo crossroads.

Changing global trade patterns and the upcoming debut of an expanded Panama Canal have state officials and port authorities looking to capitalize on demand and create a new economic wellspring.

With strong trade connections to Central and South America by virtue of their geographic locations, Florida ports are now positioned to attract all-water Asia cargoes through the Panama Canal. Brazil, Columbia, China, and Japan remain the region's top trading partners, but that list will likely skew toward the Pacific Rim over the next decade.

Recognizing that Florida's ports have a lot of room to grow—total container volume through all the state's ports in 2010 were less than that of Savannah, Ga.—Governor Rick Smith's administration has helped direct federal stimulus monies and state funds to various port infrastructure improvement projects such as dredging harbors and increasing transportation connectivity.

Notably, Florida East Coast Railway, the primary rail operator along the state's Atlantic Coast backbone, has been busy expanding and rehabilitating track as it builds direct connections to Florida's ports, specifically the Port of Miami and Port Everglades, where it offers exclusive service.

In the Sunshine State, the future looks bright. Here are four ports that are lighting the way.

Port of Tampa

Port Everglades

Port Panama City

MAIN CHANNEL **32'** DEPTH

www.portpanamaxcityusa.com

TRADE DATA

IMPORTS (CONTAINERIZED): 20,910 TEUs

EXPORTS (CONTAINERIZED): 20,998 TEUs

DOMESTIC TRADE: 91,000 tons

TOTAL TRADE: 1,381,782 tons

CARGO FACILITIES HIGHLIGHTS

The port is increasing its containerized cargo handling capacity by adding a second mobile harbor crane and expanding its container yard. These efforts will create an additional 2,200 TEUs of stacking space. The port is also expanding its bulk cargo handling capacity by 500,000 tons per year.

TRADE PARTNERS

- Mexico
- Chile
- Costa Rica
- Panama
- Netherlands
- United Kingdom

INBOUND COMMODITIES

- Apparel
- Furniture
- Copper
- Steel

OUTBOUND COMMODITIES

- Forest products
- Wood pellets
- Oil field equipment
- Power cables

Port Panama City

Port Everglades

MAIN CHANNEL **43'** DEPTH

www.porteverglades.net

TRADE DATA

VESSEL CALLS: 4,183

IMPORTS (CONTAINERIZED): 427,453 TEUs

EXPORTS (CONTAINERIZED): 440,053 TEUs

TOTAL TRADE: 10,711,299 tons

CARGO FACILITIES HIGHLIGHTS

Enhancements include new marine cargo terminals; U.S. Customs & Border Protection radiation portal monitors; and gantry crane expansion.

TRADE PARTNERS

- Honduras
- Guatemala
- Costa Rica
- Brazil
- Colombia
- China
- Venezuela
- Bahamas
- Dominican Republic
- India

INBOUND COMMODITIES

- Fruits
- Ceramic and mosaic tiles
- Vegetables
- Non-alcoholic beverages

OUTBOUND COMMODITIES

- Paper and paperboard (including waste)
- Grocery products
- Metal scrap
- Auto parts

Port of Tampa

MAIN CHANNEL 43' DEPTH

www.tampaport.com

TRADE DATA

VESSEL CALLS: 2,824

IMPORTS (CONTAINERIZED): 201,000 TEUs

EXPORTS (CONTAINERIZED): 110,000 TEUs

DOMESTIC TRADE: 22,800,000 tons

FREIGHT TRADE: 11,400,000 tons

TOTAL TRADE: 34,200,000 tons

CARGO FACILITIES HIGHLIGHTS

The port offers on-dock rail for direct vessel load and discharge; three gantry cranes; one mobile harbor crane; and nearly one million square feet of on-dock warehouse/transit shed capacity.

TRADE PARTNERS

- India
- Mexico
- Brazil
- Trinidad
- Canada
- Russia
- Australia
- Japan
- Argentina
- Turkey

INBOUND COMMODITIES

- Petroleum
- Ammonia
- Coal/coke
- Granite
- Limestone
- Liquid sulphur

OUTBOUND COMMODITIES

- Citrus pellets
- Phosphate
- Scrap
- Phosphatic chemical

Port of Tampa

Port of Miami

Port of Miami

MAIN CHANNEL 42' DEPTH

www.miamidade.gov/portofmiami

TRADE DATA

VESSEL CALLS: 1,936

IMPORTS: 2,717,708 tons

EXPORTS: 3,115,004 tons

TOTAL CONTAINER VOLUME: 847,249 TEUs

CARGO FACILITIES HIGHLIGHTS

The Port of Miami features three cargo handling facilities operated by Seaboard Marine, Terminal Link/APM Terminals, and Port of Miami Terminal Operating Company. A $46.9-million Port of Miami-Florida East Coast (FEC) Railway Rail Reconnection Project will utilize the FEC right of way to link the port to the Hialeah railyard. The rail service project includes renovating FEC tracks and repairing a drawbridge to the island port that was rendered unusable by Hurricane Wilma.

TRADE PARTNERS

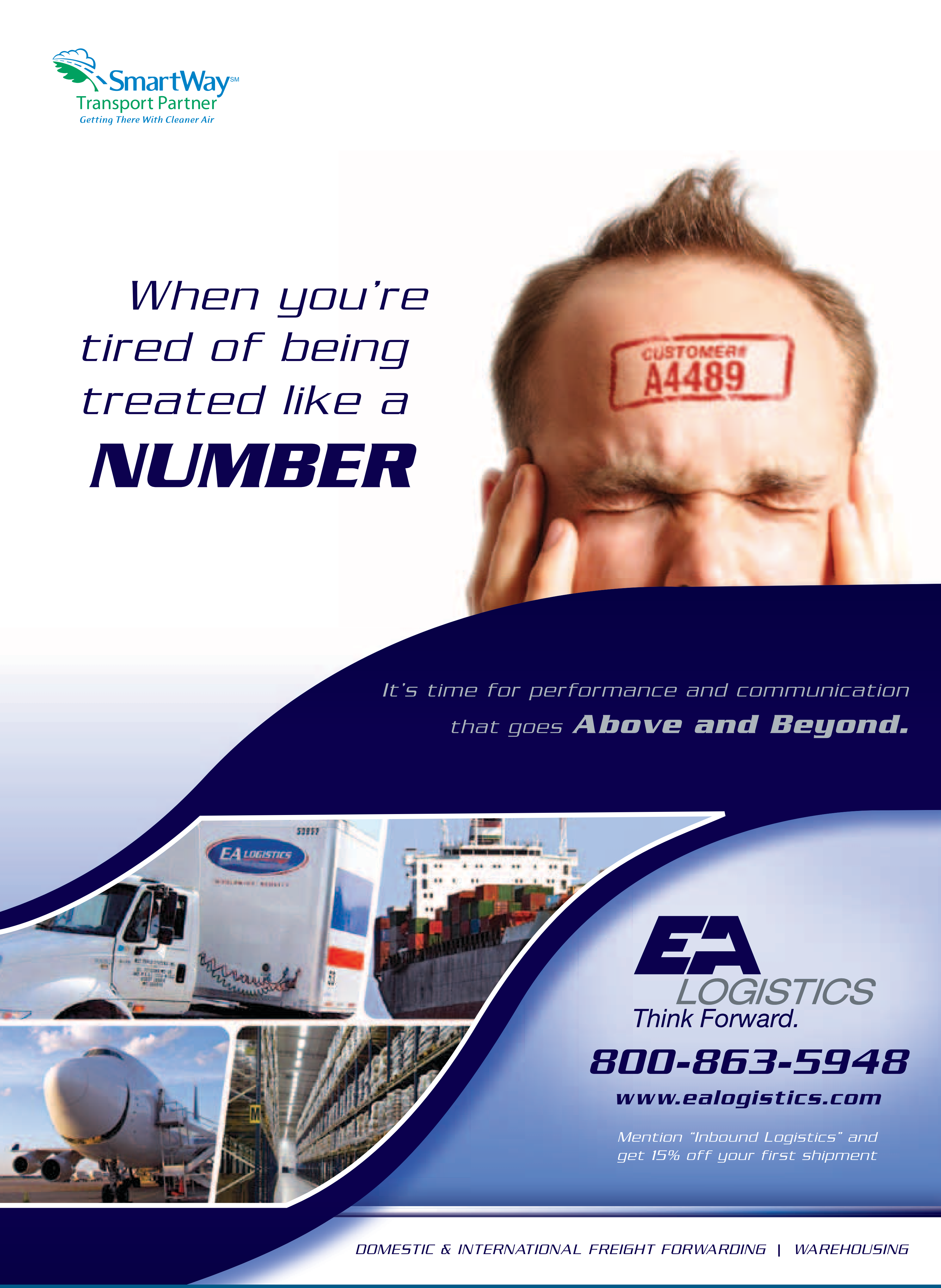
- China
- Honduras
- Hong Kong
- Germany
- Dominican Republic
- Colombia
- Italy
- Panama
- Jamaica
- Guatemala

INBOUND COMMODITIES

- Stone, clay, cement
- Tile, bricks, concrete
- Alcoholic beverages
- Apparel and other finished textiles
- Refrigerated fruits and vegetables

OUTBOUND COMMODITIES

- Paper/non-printed paper
- Woven and knitted fabrics and carpet
- Non-refrigerated foods
- Building materials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Casebook

by Justine Brown

Transporting Wind Turbines: An Oversized Challenge

As the search for alternative energy sources continues, wind power companies enjoy significant opportunities. But they also face substantial challenges, particularly when it comes to logistics. Moving 250-foot-tall wind turbines is no small feat, and requires considerable planning and expense.

Faced with moving enormous wind turbines hundreds of miles, energy giant enXco made waves – and saved on freight costs – with an innovative barge transport strategy.

In 2010, enXco Inc., a San Diego-based U.S. subsidiary of French renewable energy company EDF Energies Nouvelles, entered into a 20-year power purchase agreement with California-based Pacific Gas and Electric Company (PG&E). Under the agreement, enXco is developing and building the 100-megawatt Shiloh III Wind Project near Rio Vista in Solano County, Calif.

The wind farm will occupy 4,600 acres in the Montezuma Hills Wind Resource Area, which consists of a small range of low-elevation hills on the Sacramento River Delta's northern banks. Once the wind farm is complete, PG&E will purchase the power it generates. The project is expected to provide clean electricity for approximately 35,000 homes, beginning in early 2012.

While the project is good news for enXco and, ultimately, for consumers, the logistics challenges were daunting. In early 2009, enXco contracted with St. Cloud, Minn.-based Anderson Trucking Service International (ATSI) to ship 100 complete wind turbines to the Pacific Northwest. The nacelles (engine housings) and hubs were brought in from Germany; blades were transported from Little Rock, Ark.; and the towers were shipped from Korea.

But when the project that was to be developed in the Pacific Northwest was cancelled, the very large and expensive parts sat in limbo at the Port of Vancouver, Wash.

enXco decided to move the equipment to northern California and use it for the Shiloh III project. While this was a great way to use components that were already in the United States, it also created a complex delivery issue: how to move all the pieces from Washington to California.

TAKING STOCK OF THE OPTIONS

enXco launched a feasibility study to evaluate the options and potential costs for moving 46 tower sets from Vancouver to Rio Vista by truck, rail, and barge. While trucking was the most obvious choice, the size of the wind turbine components presented a significant challenge.

The trucking industry's fragmented regulatory system further complicated matters. Current rules allow individual states to determine the routes oversized trailers must take, which often means longer trips.

Scheduling the required highway patrol escorts was also an issue. If moved by truck, each three-section tower—consisting of base, middle, and top pieces—would need an escort. The nacelles and blades would require additional trailers and escorts. Coordinating drivers, escorts, permits, and specialized equipment to move all the parts would be a monumental task.

"We considered all our options because moving oversized loads from state to state is complex," says Steve Jones, director of tech services and special projects for enXco. "The special trailers California mandates won't necessarily meet Washington's requirements. The more we looked at the details, the clearer it became that moving the towers by truck would be expensive and complicated."

CALLING IN THE EXPERTS

enXco contacted ATSI to determine how the carrier could help with the project. ATSI has considerable experience moving wind turbine components, including delivering them to the largest wind farm in Iowa. And enXco had worked with them previously on several projects.

Custom-designed barges transported 10 sets of wind tower components at once.

Photo by Dennis Schwartz

"Problems often arise when moving wind components, and ATSI has always created work-arounds," says Jones.

"Moving wind energy equipment requires special considerations," says Joe Goering, vice president, ATSI. "Every state has multiple regulatory requirements, and turbines are continually increasing in size. We frequently compare transportation restrictions to the size of towers being built, and incorporate new trailer designs for these components. The trailers are so specific that they often will not have another use."

In the case of enXco and the Shiloh III wind project, proximity to the Pacific Ocean from Washington to California was the key. After further examination, enXco and ATSI determined barge transport would be the most efficient and economical mode.

"We contracted with ATSI to move 40 tower sets from the Port of Vancouver to the Port of Sacramento via barge, and to store them there," says Jones. "Then, when we were ready for them at the project site, ATSI would deliver them to Rio Vista by truck."

ATSI arranged to move the six additional tower sets by truck because it was not cost-effective to move less than a full load by barge.

LINING UP THE EQUIPMENT

ATSI next reached out to Seattle-based marine transportation and logistics service provider Foss Maritime Company to develop a specialty barge that could accommodate the turbine equipment. Foss Maritime delivered barges capable of transporting 10 tower sets each. Because the towers were still contained in the original transport shipping frames used when ATSI imported them from Korea to Vancouver, they were able to be double-stacked on the barges.

The ability to move 10 towers at a time greatly reduced the number of trips necessary. “The transport required only four barges,” says Goering.

The barges left Vancouver and traveled down the Pacific Coast to the Port of Sacramento. When the barges were discharged, the towers were placed into storage.

THE RISK PAYS OFF

For both ATSI and enXco, barge transportation was a new experience that proved both successful and rewarding.

“This was our first North American oceangoing/intercoastal barge transport project,” notes Goering. “We have shipped via barge up the Mississippi River in the past, but those projects required smaller barges. In this case, using smaller barges would not have been as economical.”

The barges tripled the speed of transporting the components, and eliminated the bottleneck of having to schedule highway escorts.

“Transporting 40 towers by barge took six weeks compared to 16 weeks for the trucks,” Goering says.

“Opting for barge transportation allowed us to shave off about two-thirds of the transit time, and freed up escort resources for the other components,” adds Jones. “If we had not decided to use barge transportation, we would never have met the delivery requirement.”

From the Port of Sacramento, ATSI trucked the 40 wind tower sets approximately 50 miles to the Montezuma Hills Wind Resource Area in Solano County. A construction company then went to work erecting the towers and connecting the nacelles, hubs, and blades.

In addition to clean energy, the enXco project is also generating 200 construction jobs, and will result in $3 million in annual property taxes.

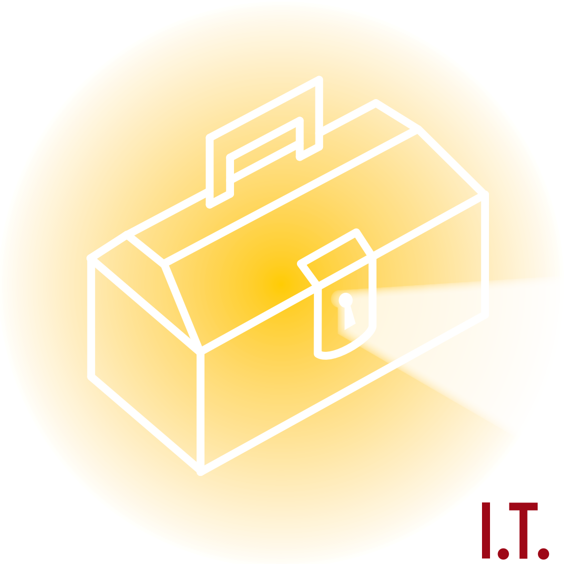
“Shiloh III is the direct result of California’s support for renewable energy mandates and the federal government’s recognition that renewable energy requires tax credits to level the playing field with fossil fuel-based resources,” says Mark Tholke, director, Southwest region, enXco.

ANOTHER SHOT

For enXco and ATSI, the ability to replicate this type of transportation for subsequent projects will depend on the location and circumstances. But given the right conditions, enXco would “definitely go this route again,” says Jones.

The company may get the opportunity soon: enXco plans to start building another 100-megawatt project dubbed Shiloh IV next year.

“With this sort of volume, barges are the way to go, both economically and logistically,” Jones notes. “We took a chance on a new alternative, and it paid off.” ■



I.T. Toolkit

by Bill Cornell

The Scoop on Route Accounting Automation

Ice cream distributor Berliner finds sweet savings with an automated direct store delivery solution.

When your business is delivering ice cream, and order tracking causes drivers to lose their cool, you have a problem. Just ask Hyattsville, Md.-based Berliner Specialty Distributors, whose outdated and burdensome manual route accounting and order-logging system was causing a meltdown.

Launched in 1973, specialty and natural frozen foods distributor Berliner serves Maryland, Virginia, and Washington, D.C. The company has distributed major brands such as Starbucks, Good Humor, Ben & Jerry's, Breyers, and Klondike.

On an average day, it manages 10 to 15 trucks out of its warehouse, and more than 500 ice cream trucks that distribute to local neighborhoods during the summer.

The company's costs were rising and efficiencies were quickly melting because of antiquated route accounting practices. Delivery drivers were manually recording customer sales histories and pertinent information in six-inch-thick route books.

Typical logs included standing orders, cash receipts, customer balances, delivery notes, customer pricing, route sequencing, and delivery records. Information was perpetually out of date, and there was no means to easily account for historical order information or calculate and print clean, accurate invoices. The billing process was entirely manual.

THE SEARCH BEGINS

Realizing how much money it was leaving on the table, Berliner began its search for an automated solution in 2008. A supplier recommended IntegraSys, a Watchung, N.J.-based mobile solutions provider.

After further investigation, Berliner decided IntegraSys was a fit, offering a combination of route accounting and direct store delivery (DSD) functions. Plus, it had a track record of successful system configurations and implementations in the ice cream industry, working with well-known brands such as Häagen-Dazs.

EN ROUTE TO BETTER PROCESSES

Berliner and IntegraSys collaborated on system modifications that could help bring the distributor's business processes to the next level. The most important integration was pairing IntegraSys' *DSD Manager* route accounting host software and hardware with Media, Pa.-based mobile business solutions company Apacheta's *RouteACE*, a flexible mobile application for DSD operations that include van sales, presales, and delivery. The combination provided a robust solution that replaced Berliner's dated log books with handheld mobile devices.

DSD Manager automates and streamlines all aspects of route distribution businesses. This functionality fit neatly with Apacheta's mobile software, connecting critical sales information to back-end order fulfillment and distribution.

DEFINING NEEDS

The planning stage took several months. Berliner had to define what it needed and how it wanted the system to work.

"After the planning stage, we needed ongoing system training for our staff," says Joe Lopez, COO/general manager, Berliner. "We also had specific requirements when we began transferring data from the old system to the new one.

"It took three months before we could actually roll out the system because of data and record cleanup, and administrative issues," he adds.

The full implementation took a year of working out bugs and adjusting the system to suit Berliner's requirements.

"In March 2012, we will have been using the automated system for four years," Lopez says. "Not only did scheduling improve, but now customers know when deliveries will occur. They know the various promotions and pricing arrangements, which takes the guesswork out of the process. They can plan their budgets more accurately, without any surprises."

Working with IntegraSys, Berliner has transitioned from using paper-based systems to a fully automated mobile sales and delivery solution. Using electronic data interchange, the application communicates daily with suppliers to facilitate ordering and provide full visibility into sales operations.

DATA EXCHANGE

In the field, drivers visit customers, enter sales order information on handheld devices, and conduct physical inventories using *RouteACE* software. The data is then transmitted wirelessly to the *DSD Manager* back-end route accounting system, which handles the entire order-to-cash cycle, including route accounting, warehouse and inventory management, pricing, promotions, commissions, accounts receivable, and accounts payable.

Orders are then transmitted for packing and distribution, and dispatchers can create routes based on product need. On-site, delivery personnel generate and print invoices, and automatically transmit data to back-end accounting systems, reducing the risk of manual error.

Automating route accounting helped Berliner Specialty Distributors better manage its deliveries of premium ice cream products such as Starbucks.

THE RESULTS ARE IN

Given these changes, it is little wonder Lopez attributes much of Berliner's business growth in recent years directly to the new route accounting system.

"Every year we get more efficient and grow more profitable," he notes. "By automating our route accounting, pickup and delivery times, and merchandising process, we are seeing benefits across the board."

These returns include:

- Fewer administrative errors
- Improved order management
- Increased sales
- Improved worker productivity
- More accurate inventory reporting
- Shortened billing cycles
- Fewer inventory returns

With help from both Apacheta and IntegraSys, Berliner continues to adapt and tweak the system to expand its capabilities. The upgrades give Berliner greater freedom to access sales data and plan inventory, while improving customer service and growing the business.

"Some companies make improvements that only help their top customers, while neglecting the needs of the more established or smaller customers," Lopez says. "Customer retention suffers as a result.

"Our new technology and processes enable us to retain customers and attract new business," he adds. "We continue to feed our customer base, and it continues to grow." ■


We make logistics
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DC Solutions

by Justine Brown

High-Reach Lift Trucks: Moving On Up

A new high-reach forklift gives Interstate Warehousing's temperature-controlled facilities a capacity boost.

When it comes to refrigerated warehouses, the sky is the limit. At least that's how Steve Tippmann, executive vice president of Tippmann Group/Interstate Warehousing, sees it.

"A temperature-controlled facility's square footage affects its capital investment and operating costs more than its height," says Tippmann. "New facility construction is only height-restricted by materials handling equipment."

Interstate Warehousing, based in Fort Wayne, Ind., operates more than 79 million cubic feet of refrigerated warehousing space at 10 facilities throughout the United States. But even with all that space, many warehouses were near-capacity.

In fact, the only places left in many facilities were the highest rack positions. But most products were too heavy, and the spaces too high to reach, using traditional lift trucks.

Empty top-rack positions are common in narrow-aisle, cold chain facilities because most forklifts do not offer the capacity or capability to reach the necessary height to fill them. For Interstate Warehousing, the empty positions not only led to wasted warehouse space, but also meant many shippers weren't able to keep all their products in a single location.

REACHING NEW HEIGHTS

"We don't just focus on the cubic footage of our warehouses; we try to use every cubic inch," says Chuck Tippmann, president, Tippmann Group.

"Most of our warehouses typically

waste cubic inches," he adds. "That translates to unrealized revenue."

While Interstate Warehousing was puzzling over how to make use of its highest rack positions, Crown Equipment, a forklift manufacturer based in New Bremen, Ohio, had developed a new concept for a narrow-aisle reach truck.

Crown already had a working relationship with Interstate Warehousing and knew it was struggling with the height issue, so the manufacturer invited the warehousing company to its headquarters to discuss the new lift truck.

Interstate Warehousing was intrigued by the design. "We knew we needed a higher-reaching lift truck," says Chuck Tippmann. "We just didn't know there was already one in development."

Crown Equipment and Interstate Warehousing collaborated to modify and improve the lift truck's design.

"Interstate Warehousing was an apt company to consult when we were determining the design of the new lift truck," says Maria Schwieterman, marketing product manager, Crown Equipment. "The company's representatives saw an opportunity to use the truck to reach another product storage level in its temperature-controlled facilities."

The new lift trucks have contributed quality and safety gains by improving operator sight lines and load placement.

The collaboration produced the Crown RM 6000, a narrow-aisle lift truck that can reach 42 feet high and deliver up to 1,000 pounds more capacity at height than a conventional truck.

Investing in Crown RM 6000 high-reach narrow-aisle forklifts increased Interstate Warehousing's facility storage capacity.

"We didn't have to make the truck wider to add height and capacity," Schwieterman notes.

The lift truck's added reach gave Interstate Warehousing the opportunity to fill the highest spaces in its facilities. The company ordered 16 Crown RM 6000s, and put them to work in its warehouses.

Interstate Warehousing has found the RM 6000's combination of narrow-aisle lift truck dimensions and extended reach well-suited to its facilities. "Most pallets we store weigh 1,600 to 2,000 pounds," says Chuck Tippmann. "The new reach trucks allow us to increase capacity in our warehouses while maintaining a small truck footprint, so two trucks can pass in the aisle. This gives us more flexibility and versatility to better serve our customers."

KEEP ON (LIFT) TRUCKIN'

The company chose the RM 6000 primarily for its weight and height capacity, but since putting the trucks to work in its facilities, Interstate Warehousing has realized they provide numerous other benefits.

First, the new lift trucks have contributed quality and safety gains by improving operator sight lines and load placement.

The lift trucks' mast is offset seven inches to the operator's left, narrows the higher it goes, and includes a larger-than-average window at eye level. These features give the operator a better view of the truck's fork tips and load.

"The improved visibility the trucks offer has increased operating speed, reduced product and rack damage, and prevented accidents in our operation," says Chuck Tippmann.

Lift truck stability is always important when carrying heavy loads at height, and the RM 6000's mast was designed with this in mind. "Mast sway makes it difficult for operators to place loads properly," notes Schwieterman. "Increased stability results in less

product damage and fewer injuries."

Interstate Warehousing's operators also appreciate the lift truck's ergonomic backrest design, which features a notch in the upper right-hand corner so they can easily scan at ground level while operating the forklift.

"Operators don't have to lean out of the lift to look up and see where they are placing the load," says Chuck Tippmann.

The facilities also benefitted from the lift trucks' extended battery life, which translates to increased operational efficiency.

Interstate Warehousing uses an in-house software program to manage and track forklift batteries for maintenance and run-times. Almost immediately, warehouse managers noticed a 30- to 60-minute increase in battery run-time, which allows many fleet operators to work through an eight-hour shift while having to change the battery only once.

"The increase in battery run-time allows fleet operators to spend less time in the battery room and more time in production," says Chuck Tippmann. "For the average fleet operator, saving even five minutes per shift can translate into $50,000 to $200,000 annual labor savings, depending on the number of operators on the shift."

UP, UP, AND AWAY

While Interstate Warehousing purchased RM 6000 lift trucks to gain capacity in its temperature-controlled storage facilities, for sister company Tippmann Construction, which designs and builds warehouses nationwide, the equipment innovation ushers in new warehouse design possibilities.

"We've always believed in building our warehouses up instead of out to save money," says Chuck Tippmann. "But the higher reach provided by lift truck innovation means we can now build even higher. We predict we'll be building customer warehouses higher as well."

"We have designed several new temperature-controlled facilities over the past year using the capabilities of the RM 6000," says Steve Tippmann. "Many customers were concerned about the quality of the facilities' operations until we gave them a tour through our latest warehouses."

Once customers see firsthand the ease with which operators handle pallets at these new heights, they get onboard.

"Our competitors can't match the capacity gains this truck offers," says Chuck Tippmann. "The RM 6000 extends warehousing's limits, and we're proud that we tested this new equipment in our facilities." ■

INBRIEF | NEW SERVICES & SOLUTIONS

SOFTWARE

PeopleNet

The new version of the *In-Cab Navigation* route management solution includes Yard Shaper, which helps fleet managers make routing decisions to direct drivers to the correct entrance and delivery spot. It outlines the shape of an arrival point within a large area and identifies the position within the location, so drivers know exactly where to enter the delivery area, where to park, and where to exit.

www.peoplenetonline.com 888-346-3486

▲ Air: Alaska Air Cargo

New cargo-tracking service Alaska Mobile Track allows cargo shippers to use their mobile phones to send a text message to Alaska Air Cargo with their air waybill number, then receive a text response reporting their shipment's status.

www.alaskaair.com 800-225-2752

FedEx Freight

FedEx Freight introduced electronic shipping solutions to streamline its less-than-truckload services. Designed for small and medium retailers and manufacturers, *FedEx Ship Manager* software helps shippers manage multiple FedEx Freight shipments. For customers with continuous high-volume shipping needs, FedEx Web Services and FedEx Ship Manager Server allow integration of FedEx electronic solutions into existing software applications for customized shipping management capabilities.

www.fedex.com 800-GO-FEDEX


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TAKE Solutions

The new version of *OneSCM* multi-enterprise online collaboration suite includes a new mobile applications framework that allows trading partners to access/share data and perform transactions directly from mobile devices. The release also includes improved vendor master data management, supplier on-boarding, and multi-language support.

www.takesolutions.com 609-720-1002

Kewill

Kewill added support for three additional carrier returns services to its *Flagship* parcel shipping solution. Shippers can now use the software with Newgistics SmartLabel, UPS Returns Flexible Access, and FedEx SmartPost to generate returns labels that can be enclosed in product shipments.

www.kewill.com 978-482-2500

TRUCKING

Old Dominion Freight Line

Old Dominion relocated its service center in Windsor, Conn., to a 66-door terminal that provides twice as much capacity as the former location. Situated on a 12-acre site with easy access to Interstate 91, the new facility provides service to more than 15 cities in a 50-mile radius.

www.odfl.com 800-432-6335

U.S. Xpress Enterprises

The transportation services provider expanded its Xpress Direct Demand Critical fleet to include smaller capacity vehicles, including cargo vans and straight trucks. The company is currently operating nearly 30 of these vans and trucks, and plans to have up to 200 in use by mid-2012. The expanded fleet primarily serves the automotive, heavy truck, consumer, and life science sectors in the Midwest and Southeast.

www.usxpress.com 800-251-6291

PARTNERSHIPS

MIQ Logistics and Tolepu S.A.

MIQ Logistics, a global logistics company headquartered in Overland Park, Kansas, with offices in North America, Asia, Europe, and South America, partnered with Tolepu S.A., a supply chain services provider and customs broker in Ecuador. Through the arrangement, Tolepu acts as MIQ Logistics'

agent, providing global supply chain services for goods moving into, out of, and within Ecuador.

www.miq.com 877-232-1845

MATERIALS HANDLING

Kiva Systems

The Kiva Robot Rental Program allows order fulfillment and distribution operations to rent additional robotic drive units to meet increased automated equipment needs during peak season.

www.kivasystems.com 781-221-4640

Equipto

The V-Grip flexible storage system comprises heavy-duty uprights; top, bottom, back, and side panels; and 400-pound capacity shelving that adjusts at three-inch increments for storing different sized items. For more efficient storage of small to medium-sized parts, drawers in three-inch increments can be added, along with drawer or shelf dividers to keep small parts from mixing. For security and visibility, locking and see-through doors in various combinations can be added.

www.equipto.com 800-323-0801

MOBILE DEVICES & APPS

TomTom

The WEBFLEET Mobile smartphone app allows fleet managers to quickly pinpoint the location of their fleet, and obtain information on each vehicle's destination and estimated time of arrival, as well as trip data such as mileage and timestamps. WEBFLEET Mobile includes current traffic mapping using TomTom HD Traffic, is available on the iOS and Android platforms, and can be downloaded from the Apple Store or Android Market.

www.tomtom.com 866-486-6866

Datalogic Scanning

Suitable for use in warehouse, specialty retail, and healthcare applications, the Gryphon GM4400 2D bar-code reader provides omnidirectional reading of both 1D and 2D bar codes, regardless of label orientation. Full image-capture capability aids in identifying poorly printed codes or damaged packaging.

www.scanning.datalogic.com 800-695-5700

COLD CHAIN SOLUTIONS

Cooltrax Americas

The Cooltrax monitoring system combines active radio-frequency technology with a Web-based interface to track, capture, and automatically report product temperatures and locations in real-time–whether from inside a reefer, distribution center, or refrigerated retail cabinet.

www.cooltrax.com 877-667-6868

FREIGHT FORWARDING

DHL Global Forwarding

Air and ocean freight specialist DHL Global Forwarding added a branch in Greensboro, N.C., to serve the area's high-tech and pharmaceutical companies.

www.dhl.com 786-264-3684

Team Worldwide

The Texas-based global forwarder expanded its system with a new office in Milwaukee, Wis. Offerings include domestic and international air cargo service, ocean transportation, domestic surface transportation, warehousing/distribution capabilities, and other ancillary services.

www.teamww.com 414-482-9020

▲ **Materials Handling: Dematic**

A new version of the Dematic Multishuttle staging buffer, the Dematic Multishuttle Flex, accepts totes, trays, and cartons. The Multishuttle Flex expands and contracts to accommodate loads from eight to 24 inches wide and six to 34 inches long. It automatically adjusts as it travels to a storage location so that the extractor device is set to accept the load.

www.dematic.us 877-725-7500

AIR

Lufthansa Cargo

The 48,400-square-foot Lufthansa Cargo Cool Center in Frankfurt features a deep-freezer cell and four cool-storage rooms to provide four different temperature ranges. All temperature-controlled shipments carried by the airline through Frankfurt pass through the new facility.

www.lufthansa-cargo.com 800-542-2746

AirBridgeCargo Airlines (ABC)

ABC began all-cargo services to Chengdu International Airport. The service, operated by B747-400 freighter, adds Chengdu – the capital of Sichuan province in Western China – to ABC's existing route between Zhengzhou, Moscow, and Amsterdam. The new scheduled routing operates three

▲ **Materials Handling: Buckhorn Inc.**

Designed for corrugated bulk container users, the Maximizer collapsible container features an integrated pallet-and-lid system; durable, moisture-resistant, 100-percent recyclable plastic construction; two full-width access side doors; and four-way forklift pallet entry. The 48-inch x 40-inch x 41-inch container holds up to 1,000 pounds, but weighs approximately 30 percent less than traditional plastic bulk boxes. It can be stacked three high for added storage space, and one assembled unit can store eight collapsed containers inside.

www.buckhorninc.com 800-543-4454


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times weekly to serve the local export manufacturing and freight forwarding communities.

www.airbridgecargo.com	416-622-9450

ECS Group

ECS Group opened new branches in Mumbai and Delhi, its first offices in India, to provide general air cargo sales and service agent solutions, warehousing, and charter services.

www.euro-cargo.com	305-871-4011

INTERMODAL

ASF Intermodal

ASF Intermodal opened a new intermodal drayage facility in Houston, Texas. The operation provides drayage service in and out of the Houston market's port and rail facilities, and allows the company to provide expanded capacity to its customer base throughout the southeastern United States.

www.asfintermodal.com	281-254-1589

Union Pacific and CSX

Union Pacific and CSX launched intermodal service between Detroit, Mich., and Laredo, Texas. Using the UMAX container fleet for this interline service, Union Pacific and CSX deliver to Laredo in four days and to Detroit in five days.

www.up.com	402-544-5000
www.csx.com	904-359-3200

OCEAN

Panalpina

Two new weekly, direct, LCL services depart Keelung, Taiwan, and Busan, South Korea, for Wroclaw, Poland. The new routes reduce transit times by two days and carbon emissions by up to seven percent.

www.panalpina.com	973-683-9000

CMA CGM Group

The upgraded ASEA weekly service connecting Asia, Kenya, and Tanzania deploys six 2,500-TEU ships and provides rapid transit time from Asia to Mombasa and Dar Es Salam. The service offers enhanced reefer capacity to meet the growing demand for refrigerated transport on this route.

www.cma-cgm.com	757-961-2100

▲ Cold Chain Solutions: Thermo King

Approved by the Federal Aviation Association, the RKN e1 active refrigeration air shipment container can be carried onboard most common long-haul aircraft. During air or ground transport, the RKN e1 runs autonomously on batteries. The unit can maintain the selected temperature for more than 100 hours in a typical shipping scenario, and for a minimum of 30 hours in extreme conditions ranging from 14 to 86 degrees F. The batteries are fully rechargeable within eight hours using adaptable power plugs, which work within the United States and in approximately 80 percent of countries.

www.thermoking.com	952-887-2200

SeaFreight

SeaFreight opened a new 25-acre marine cargo terminal at South Florida's Port Everglades, from which it operates eight containerships with twice-weekly fixed-day sailings to and from the Caribbean.

www.seafreightagencies.com	305-592-6060

The New World Alliance (TNWA)

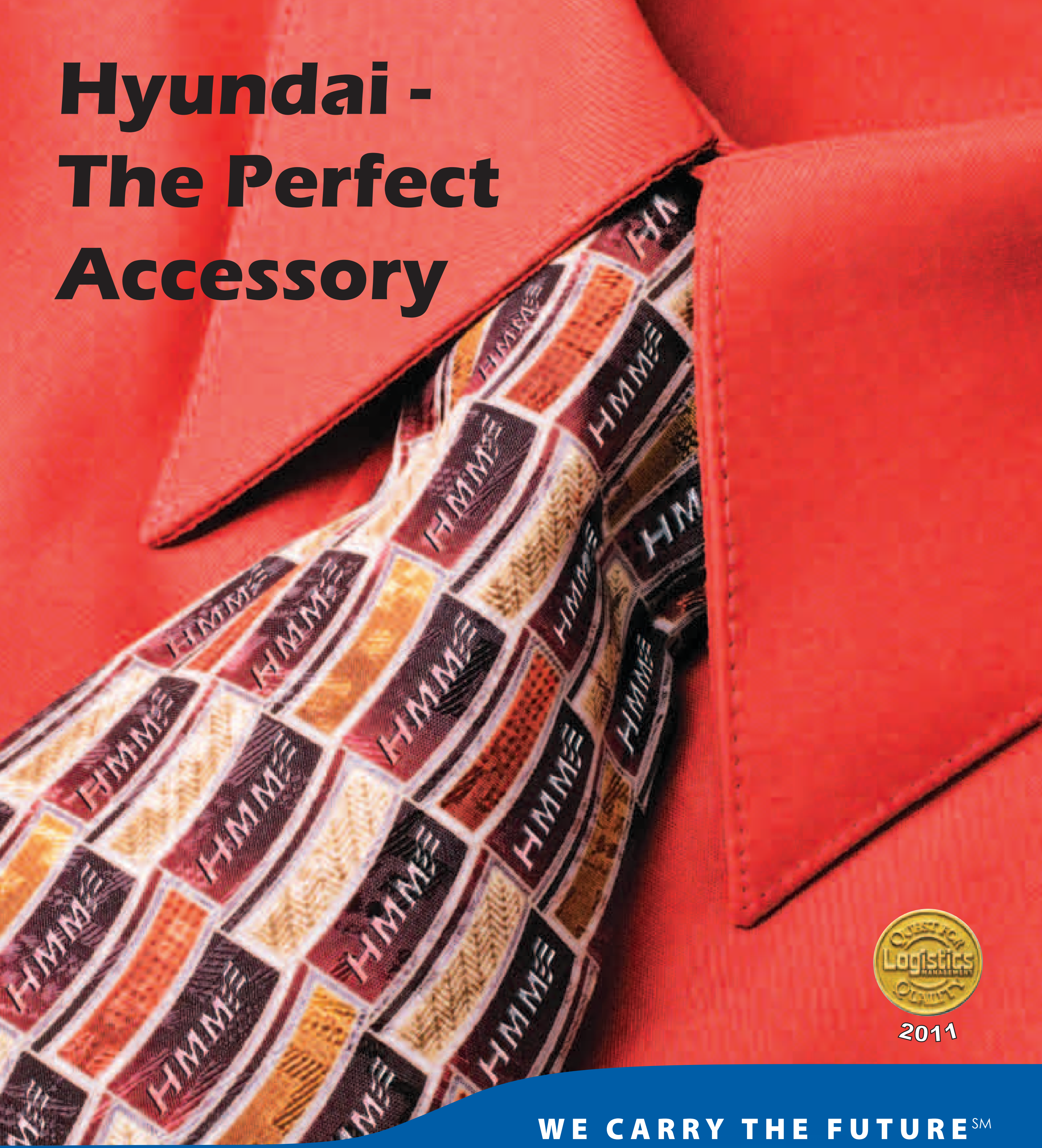
In early 2012, TNWA will launch the Americas Europe Express, a new transatlantic service offering multiple weekly sailings from major U.S. and European ports, as well as competitive transit times from Latin America to North Europe via the transshipment hub in Panama. TNWA member lines APL Co., Hyundai Merchant Marine, and Mitsui OSK Lines provide five high-capacity reefer ships with an average capacity of 3,200 TEUs to serve the route.

www.apl.com	800-999-7733
www.hmm21.com	972-501-1100
www.molpower.com	800-449-7575

CaroTrans

A new direct, all-water, less-than-containerload (LCL) import service offers 32-day transit from Shanghai to Boston. CaroTrans offers LCL consolidation services to the United States from multiple China ports including Shenzhen, Hong Kong, Xingang, and Ningbo.

www.carotrans.com	732-540-8000


Hyundai -
The Perfect
Accessory
2011

3PLs

International Warehouse Group

International Warehouse Group's Melville, N.Y., facility now offers pick and pack services, in addition to trucking and storage.

www.intlwhsegrp.com 631-617-5670

Transplace

Transplace's Mexico division is now a licensed U.S. Customs Broker, which allows the 3PL to provide cross-border shippers full visibility of U.S.-Mexico import and export shipments.

www.transplace.com 866-413-9266

Ryder

A new co-location solution integrates forward and reverse logistics in the same facility to optimize the returns process and drive greater value recovery of returned assets. By locating the distribution management of finished goods with returns processes such as technical repair, refurbishment, and repackaging in the same facility, the solution offers companies the ability to achieve greater speed to shelf, visibility, and cost-savings.

www.ryder.com 888-793-3702

▶ Mobile Devices & Apps: Honeywell

The Dolphin 7800 enterprise digital assistant provides parcel and direct store delivery workers access to a range of data collection and computing capabilities in warehousing, trailer yard, and loading dock environments. The rugged device withstands drops to concrete from as high as five feet, and features a 3.5-inch display that is easy to read both indoors and outdoors.

www.honeywell.com 877-841-2840

Con-way Multimodal

A new 6,800-square-foot facility in Dallas arranges third-party carrier services for over-the-road, intermodal, flatbed, heavy haul, and specialized transportation for freight shipments.

www.con-way.com 800-763-2222

Graybar

A new 13,000-square-foot facility in Lincoln, Neb., serves the Lincoln metropolitan area and Lancaster and Seward counties, providing supply chain management and logistics services, and distributing electrical, communications, and data networking products.

www.graybar.com 402-325-2400

CEVA Logistics

CEVA Logistics introduced less-than-containerload (LCL) consolidation in 30 locations worldwide, including Los Angeles to Shanghai, Singapore, Hong Kong, Sydney, and Melbourne; Hamburg to Shanghai, Singapore, and Dubai; Shanghai to Dallas, Singapore, and Hamburg; and Nhava Sheva, India, to New York. The new services provide shippers options including LCL, full containerload, and breakbulk.

www.cevalogistics.com 800-355-0350

Laufer Group International

Laufer expanded its Atlanta, Seattle, and Chicago facilities to serve the growing transpacific trade and continue providing shippers with a complete and expansive coverage network.

www.laufer.com 212-945-6000

Leading Edge Logistics (LEL)

A new division, Leading Edge Logistics Caribe, serves the logistics market in Puerto Rico and the Dominican Republic. LEL Caribe offers truckload, less-than-truckload, and refrigerated trucking; air freight, intermodal, and expedited shipping; warehousing, crossdocking, consolidation, and deconsolidation; and claims management.

www.leadingedgelogistics.com 800-735-9010

BTX Global Logistics

Formerly BTX Air Express, the company changed its name to reflect its additional services, including warehousing, fulfillment, and transporting heavyweight, time-sensitive shipments by air, land, and sea. BTX operates 25 branch offices throughout the United States.

www.btxair.com 877-289-2471

PRINTERS

Tharo Systems

The multi-function PA1200cw corner wrap label printer/applicator can print and apply a label to two adjacent product surfaces – front and side, or front and top. The PA1200cw has a print width of up to 4.4 inches, and a print length of up to 13 inches.

www.tharo.com 800-878-6833

▲ Ocean: FESCO Russian Pacific Line

A new service departs the Port of Tacoma with a transit time of 14 days to Vladivostok, continuing to ports in far eastern Russia. The service offers breakbulk, roll on/roll off, and project cargo handling to accommodate automobile, truck and trailer, heavy industrial machinery, and oil and gas shipments.

www.fesco-na.com 800-ASK-FESCO

LIFT TRUCKS

Raymond Corporation

Designed for handling long or bulky loads in narrow aisles, the Model 9300 and 9400 sideloaders feature a 30-foot stacking capability and 12,000-pound lift capacity for loads as long as 26 feet, such as bar stock, carpet, furniture, and lumber.

www.raymondcorp.com 800-235-7200

Hyster Company

A new series of AC-powered order pickers offers 1,500- to 3,000-pound lift capacities. Models include the heavy-duty R30XM3, with travel speeds up to 6.5 mph; standard-duty R30XMS3; R30XMA3 straddle selector; and R30XMF3 furniture selector.

www.hyster.com 800-HYSTER-1

▲ Mobile Devices & Apps: Panasonic

Suitable for use in delivery and warehousing applications, the Toughpad series of Android-powered tablet computers are available in seven- and 10-inch models. The devices incorporate security embedded at the hardware level and technologies such as hardware and software encryption. A stylus and active digitizer enable flexible data entry in the field, as well as signature capture and handwriting recognition functionalities. Other features include an integrated camera, serviceable battery, multiple options for peripheral connectivity, and full-day battery life.

www.panasonic.com 800-405-0652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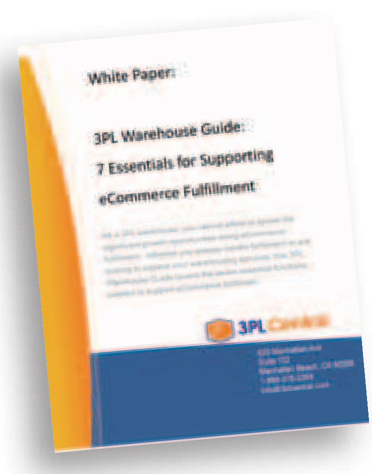
White Paper Digest

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



3PL Central

TITLE: ***3PL Warehouse Guide: 7 Essentials for Supporting eCommerce Fulfillment***

LENGTH: *9 pages*

DOWNLOAD: *www.3plcentral.com/holiday_ecommerce_email/*

SUMMARY: Holiday eCommerce sales are booming. In fact, this year's totals are expected to rise 16.8 percent to $46.7 billion. Few expect next year to be any different. To make sure your 3PL gets its share of this fast-growing market segment, download 3PL Central's free whitepaper *The 7 Essentials for Supporting eCommerce Fulfillment*. Filled with operational tips and best practices, this whitepaper contains everything your 3PL needs to ensure it can handle the complex eCommerce fulfillment process flawlessly. Download a free copy today.

Ryder

TITLE: ***Ryder's Lean Guiding Principles White Paper Series***

DOWNLOAD: *www.ryder.com/supplychain_resources_lean-guiding-principles.shtml*

SUMMARY: Ryder's Lean Guiding Principles are the foundation for operational excellence in all its customers' warehouses. These principles can help your company eliminate waste, drive efficiency, and increase customer satisfaction. To learn more, check out this series of whitepapers.

White Paper Digest

Amber Road

TITLE: ***Key Strategies for Automating the Import Supply Chain***
LENGTH: *9 pages*
DOWNLOAD: *bit.ly/tOB8la*
SUMMARY: New GTM technologies are increasingly important to automate global operations across procurement, logistics, and trade compliance business processes. Download this whitepaper, *Key Strategies for Automating the Import Supply Chain*, to discover steps to drive performance, reduce costs, and simplify your import supply chain.

Logility

TITLE: ***Winning the Inventory Battle in Consumer Electronics***
LENGTH: *9 pages*
DOWNLOAD: *www.logility.com/library/supply-chain-white-papers*
SUMMARY: In the electronics industry, product shelf lives are short and the greatest margin occurs during a successful product launch. But 50 percent of new product introductions fail to achieve success, and almost half of those failures are due to initial misreads of market expectations. Why? This whitepaper looks at how the battle for profitability turns largely on two key disciplines: accurate demand planning and effective inventory optimization.

Kiva Systems

TITLE: ***Crate & Barrel – Why Speed to Deploy eCommerce Solution Matters***
LENGTH: *Video*
WATCH: *www.kivasystems.com/2011/il_dec2011*
SUMMARY: Crate & Barrel was able to exceed customer expectations during peak season by rolling out its Kiva Systems solution in six months, as opposed to more traditional automation that would have taken 12 to 18 months to implement. The speed to deploy materials handling, add capacity, and change operations is critical for long-term success. This video shows how Crate & Barrel did it.

TransportGistics

TITLE: ***Inbound Transportation Management and Control: Low Hanging Fruit and How to Grab It***
LENGTH: *9 pages*
DOWNLOAD: *bit.ly/yIE7Ep*
SUMMARY: In most organizations, the cost of transportation is equal to or greater than the combined costs of warehousing, order entry, and customer service. As the supply chain becomes more refined and integrated, its management has an even greater impact on the bottom line. Every dollar allocated to transportation and materials management must be ultra-efficient. When it comes to managing your transportation program, the overriding theme must be control, yet many organizations have not applied the same efforts to inbound transportation management as they have to outbound management, making it a great opportunity for efficiency and cost savings. This whitepaper identifies and discusses the most important, perhaps simplest of steps necessary to improve inbound transportation management as well as the opportunities that this improvement will yield.

WhitePaperDigest

Kane Is Able

TITLE: ***Managing Logistics Outsourcing Relationships: Why 3PLs Need to be Embedded in Your Business***
LENGTH: *4 pages*
DOWNLOAD: *www.kaneisable.com/whitepapers*
SUMMARY: Current models for managing outsourced logistics relationships limit the ability of third-party logistics providers (3PLs) to drive the innovation that their customers crave. Changes are needed that allow 3PLs to become strategically embedded in their customers' organizations, with full access to long-range business and supply chain plans. Empowered by this information, 3PLs can move beyond tactical execution to fulfill the more important and powerful roles of supply chain innovator and change agent.

Cass Information Systems

TITLE: ***Six Best Practices in Freight Audit and Payment***
LENGTH: *7 pages*
DOWNLOAD: *bit.ly/Awg3CM*
SUMMARY: The range of capabilities in freight audit and payment solutions runs the gamut from simple to incredibly complex. Shippers must match the complexity of their solution to that of their transportation activity, accounting needs, and business intelligence requirements. Find out how best-practice companies approach freight audit and payment in this whitepaper, which will help you benchmark your organization's existing processes with best practices.

Purolator International, Inc.

TITLE: ***Border Hassles That Can Put the Canadian Market Out of Reach: What Your Business Should Know***
LENGTH: *18 pages*
DOWNLOAD: *bit.ly/yVrpB6*
SUMMARY: This whitepaper discusses regulatory and logistical hurdles U.S. businesses must be aware of when shipping across the U.S./Canadian border. These challenges must be understood and addressed as part of the cross-border experience. Transporting goods into Canada is a complicated process. Regulations and protocols are constantly changing and U.S. businesses must entrust their Canadian-bound shipments to a qualified logistics provider that ensures shipments are afforded every trade enhancement, priority clearance review, and duty/tax reduction to which they are entitled.

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703-841-2300
www.rila.org

March 21-24, 2012, Transportation Intermediaries Association Annual Convention and Trade Show, San Antonio, Texas. Seminars and workshops at this event explore the challenges facing the third-party logistics industry, and offer strategies to cope with the current business climate. Three pre-convention seminars address improving 3PL sales, legal issues affecting 3PLs, and methods for driving profitable growth through incentives.

703-299-5700
www.tianet.org

April 11-13, 2012, AmeriQuest Transportation Industry Symposium, Orlando, Fla. Senior management from private fleet, truck leasing, truckload carrier, and transportation supply chain companies gather to analyze important transportation industry issues that will affect companies' performance today and in the future.

800-608-0809
www.ameriquestcorp.com

April 13-June 1, 2012, APICS CSCP Certification Training, Bethlehem, Pa. The Center for Value Chain Research at Lehigh University helps supply chain practitioners prepare for the Association for Operations Management's (APICS) Supply Chain Professional (CSCP) certification through five eight-hour courses, held April 13 and 27; May 11 and 18; and June 1. Each class covers one module of the CSCP Learning System, plus a review session.

610-758-6428
www.lehigh.edu

April 22-24, 2012, SCOPE East 2012, Chicago, Ill. The Supply Chain Operations Private Exposition (SCOPE) program offers educational sessions focused on consumer goods, retail, and industrial supply chains; 3PL/distribution; and summits for CIOs and procurement executives. The event also features strategic presentations and panels from industry thought leaders, real-world customer-led case studies, targeted research meetings with leading suppliers, and networking opportunities with industry peers.

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April 29-May 2, 2012, NASSTRAC Logistics Conference & Expo, Orlando, Fla. Hosted by the National Shippers Strategic Transportation Council, this conference attracts transportation and supply chain executives with manufacturers, retailers, and distributors, as well as leading 3PLs and carriers. Educational sessions feature executives from leading motor carriers and logistics service providers discussing issues facing the trucking industry and logistics sector; and shippers explaining best practices in their supply chain strategies. The event also features a full exhibition of leading carriers and providers.

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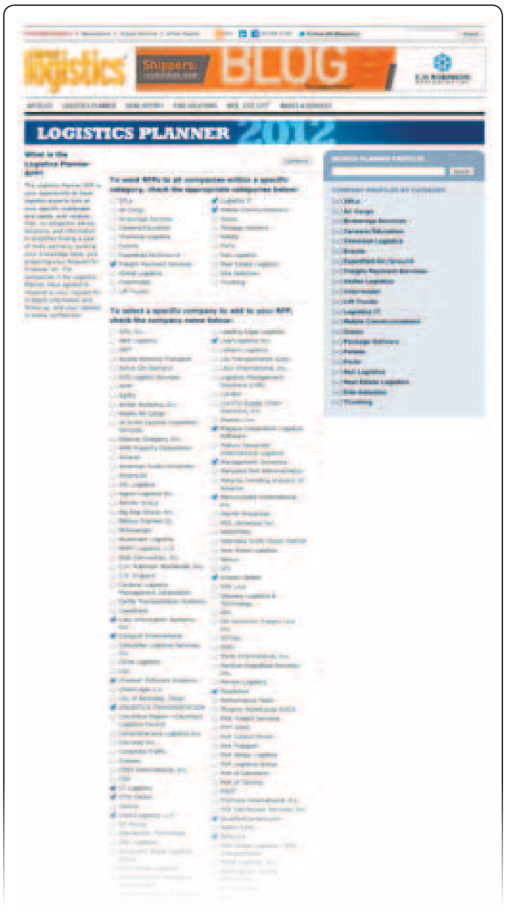

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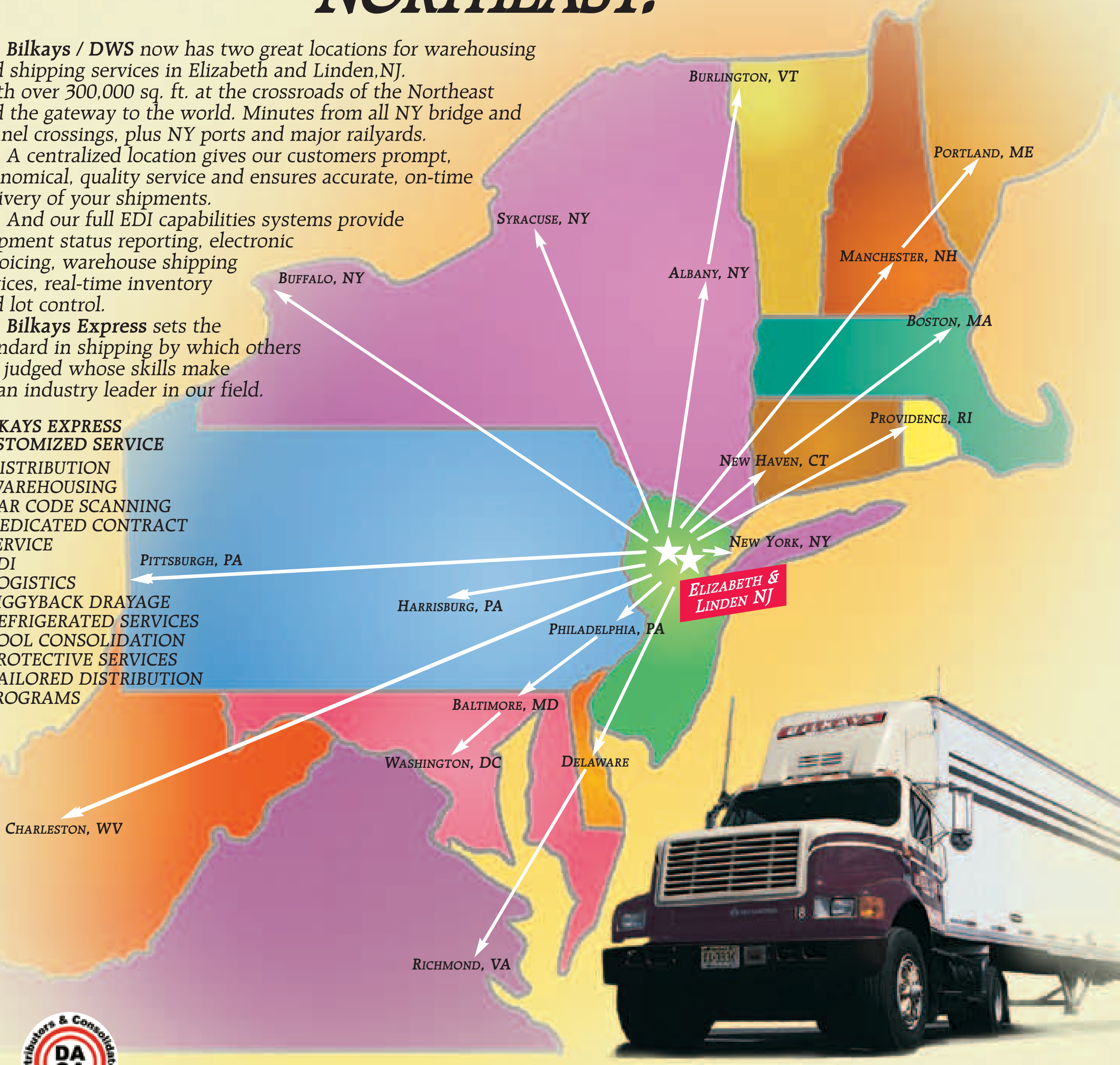

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