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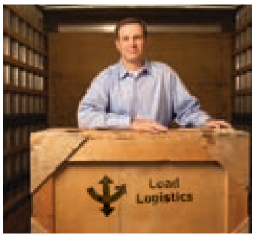


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June 2011 • Vol. 31 • No. 6

INSIGHT

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SPECIAL SECTION: THE BUSINESS SIDE OF GREEN

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INFO

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CHECKINGIN

Felecia Stratton

by Felecia Stratton | **Editor**

For the Love of the Green

Everyone wants to be green. But no one wants to let go of their own green. The cost of living in a more sustainable way when the cost of living continues to rise is inevitably changing consumer buying habits.

Walfried Lassar, director of the Ryder Center at Florida International University, raised an intriguing question at the Green Supply Chain Forum in Miami. Playing devil's advocate, Lassar challenged attendees to consider whether the green consumer phenomenon was nothing more than a fad. If the buying public can afford to pay more for environmentally sensitive products now, he argued, does that not suppose tastes might change when discretionary income is scarce later?

Lassar's observation was prescient. Of late, manufacturers and retailers are pondering that same question.

Clorox, for example, debuted its Green Works brand in 2008 as an environmentally sensitive cleaning line. Sales that year reached $100 million. However, Clorox spent only $1.4 million on advertising the brand in 2010–compared to more than $25 million in both 2008 and 2009.

Other companies, including Walmart, The Home Depot, and SC Johnson, have scaled back similar green initiatives. Why the change in behavior?

"Faced with direct or indirect customer pressure, companies react by moving forward with sustainability efforts… but the reverse is also true. When there is lack of customer pressure, sustainability efforts can stall," according to SCM World's *Chief Supply Chain Officer Report 2011*.

In retrospect, Lassar's teasing presumption bears some truth. Sustainability's fad appeal has lost luster and the supply chain is reacting to demand. While some forward-thinking CPG companies have made supply chain sustainability a strategic priority, others that have preyed on the consumer's social conscience are struggling with buyer's caprice–and lack of remorse.

Being green isn't easy. Less than 30 percent of companies have visibility over immediate suppliers regarding environmental standards, reports the SCM World study.

But there is some positive news. Some leaders in the transportation and logistics sector are moving forward with green initiatives. Asset-heavy carriers, 3PLs, materials handling companies, and port authorities have been investing in sustainability as a means to reduce operational costs, eliminate emissions, ration energy consumption, and help customers increase transparency among their partners. They are empowering business process change deep within the supply chain rather than at the store shelf.

Inbound Logistics' Green 75 Supply Chain Partners directory *(page 53)* celebrates companies that understand the unyielding commitment and investment necessary to establish sustainability as a measure of supply chain excellence, and to change consumer and shipper behavior by making sustainability economic, and not an additional cost.

They do it for the love of the green. ■

inbound logistics

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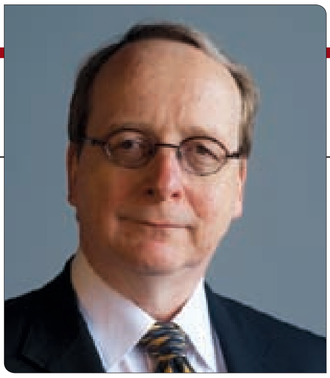

INPERSPECTIVE

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

For Carriers, Time is of the Essence

A subtle but dramatic shift is taking place in motor carriage—distance still matters, but carriers are focusing on time.

Motor carriers have 660 minutes per driver per day of capacity to sell. That current hours-of-service (HOS) limit on a driver's time will govern carrier thinking and pricing. Shippers who understand cost per hour or cost per day will have an advantage when dealing with carriers.

"Hammering carriers for price cuts during a downturn is counter-productive," says Christine Greer, logistics manager for Guardian Glass, one of the world's largest manufacturers of float glass and fabricated glass products.

After reviewing the market cycles of the past 10 years, Greer developed a strategy to keep carriers and key suppliers as whole as possible during the down market and build a stronger relationship that will help ensure Guardian has access to capacity when the cycle turns. "My job is more about relationship management than it has ever been," she notes.

The cycle that led to overcapacity could turn dramatically, leaving some shippers in a tight spot. Among the market drivers are, frankly, drivers.

A tight economy has meant many drivers who were able to keep working have not seen pay increases. Pay levels and work lifestyle are combining to make the profession less attractive to new workers. One good bump in construction, and some drivers will move to that industry. Carriers that have been able to maintain or improve driver pay and conditions, rather than make deep cuts, may have the advantage of more driver loyalty when jobs start to open up.

Safety compliance issues could further exacerbate the situation. Shippers were in for some unpleasant surprises when carrier data was made available under the CSA 2010 safety reporting standards. Even carriers who have been proactive about driver performance and safety could need up to 24 months to work off bad scores. The bad drivers may be gone, but the carrier is left with the effects of those safety scores. Add HOS rule proposals that could shave even more time from driver duty cycles, and the challenges continue to mount for drivers, carriers, and shippers.

Arne Gonzales, who sets supply chain strategy for the H-E-B chain of regional grocery stores, modeled the proposed HOS changes and determined they could add one day to transit time for goods coming out of southern California. For perishable produce, that just doesn't work. He and other shippers are looking for alternatives, including more use of rail intermodal.

Shippers and carriers need true cooperation to optimize and balance network lanes. To achieve this, shippers need to share more information with carriers and, potentially, other shippers who might be able to provide balancing loads. According to carriers, shippers are good at specifying annual volumes in bids, but they need a closer view to help them plan capacity week to week and day to day.

The message for shippers is: regardless of where fuel costs are headed, carriers face major time constraints. They need your help to plan together and improve scheduling and dock performance to get drivers moving. The hours they gain could come back as better service and less volatile pricing.

By working with carriers, and understanding their issues, shippers could find it easier to get capacity when supply is tight. ■


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10TIPS

STEP-BY-STEP SOLUTIONS

by Deborah Catalano Ruriani

Managing Fresh Produce Shipments

With produce's limited shelf life, on-time delivery takes on increased importance. These goods must move quickly through the supply chain, as any delay can result in spoilage and lost revenue. Eden Prairie, Minn.-based third-party logistics provider C.H. Robinson's general managers, Gary York, Bob Biesterfeld, and Mark Petersen, provide this advice for managing produce shipments.

1 **Develop documented standard operating procedures.** When carriers know the rules at a shipper or consignee facility, it reduces detention charges, loading and unloading fees, and mistakes in handling rejected freight.

2 **Build your carrier inventory.** Identifying multiple carriers and modes to move fresh produce gives shippers pricing flexibility, which is useful when fuel costs rise. Options such as intermodal or carload are more fuel-efficient than truckload shipments.

3 **Create a forward inventory.** When it comes to produce, having a just-in-time delivery network gives companies the ability to order product today for delivery tomorrow morning, ensuring consumers the freshest selection.

4 **Stay on schedule.** Shippers and consignees should make carrier appointments to prevent backlogs on the dock and reduce the risk of food spoilage.

5 **Develop a qualified carrier base.** Expanded federal legislation and oversight in the transportation industry makes it crucial that providers offer full visibility to your shipments; maintain load security; and ensure the cold chain remains intact throughout the load's life. Food safety and traceability are two of the most important challenges facing the produce industry. Validating your carrier base against strict industry protocols is a top priority.

6 **Make yourself an attractive shipper.** Inspecting the inside of trailers to make sure they are clean, dry, and odor-free is just the start. Ensure that your carriers know your standard operating procedures, and that your shipping department confirms proper loading temperatures and matches case counts to bills of lading. Provide a driver lounge to maximize downtime, and keep up with legislation on issues such as hours of service. Rule changes could affect how far a carrier can drive in one day, which could require you to adjust your current network model–and impact costs.

7 **Find the perfect match.** Shippers work hard to create a supply chain that meets their business needs, but they also need to ensure they are working with carriers who understand and can fulfill those needs at the right price. Sometimes it costs a little more to get the service you require.

8 **Monitor temperatures.** Shippers monitor temperatures at their warehouses and make sure the trailer is the right temperature before loading the product. But once the product leaves the dock, the shipment is the carrier's responsibility. Make sure your carrier has the right tools, technology, and procedures to monitor, report, and adjust temperatures while the product is in transit.

9 **Ship it forward, trace it back.** The last thing anyone wants is to be faced with a recall, but preparing yourself in advance with the technology to quickly trace the product back to the farm, and even the lot, saves time and money.

10 **Deal with issues in a timely manner.** Shippers are entitled to due process and the right of inspection, but they need to process rejections quickly. ■

READER PROFILE

by Merrill Douglas

What's Brewing?

Green Mountain Coffee Roasters Inc. (GMCR) ranked second on *Fortune*'s 2010 list of the 100 Fastest-Growing Companies. When a business grows that fast, its logistics organization finds itself continually racing to redesign facilities and networks to meet demand.

"We constantly have to reallocate space," says Jennifer Burkhardt, transportation manager for GMCR's specialty coffee business unit.

The specialty coffee business unit produces and sells coffee, tea, hot cocoa, and other beverages, including brands such as Green Mountain, Tully's Coffee, and Timothy's World Coffee. It sells through both business-to-business and business-to-consumer channels. It also supplies coffee to GMCR's Keurig business unit, whose popular brewing systems and K-cups are driving much of the company's growth.

As transportation manager, Burkhardt takes charge of all movements into and out of GMCR's manufacturing and distribution sites in Vermont, Tennessee, Washington, California, and Canada. "I'm responsible for establishing rates and guaranteeing capacity," she says.

Her staff also handles claims, freight payments, and freight auditing, and helps the customer service department with delivery-related concerns.

Burkhardt brings a broad perspective to her job, having worked for two trucking companies and a third-party logistics firm, as well as several shippers. Her background is beneficial in efforts such as carrier negotiations.

A FRESH POT

NAME: **Jennifer Burkhardt**

TITLE: Transportation manager, specialty coffee business unit

COMPANY: Green Mountain Coffee Roasters, since 2008

PREVIOUS EXPERIENCE: Network manager, strategic accounts manager, Schneider National; traffic coordinator, Seal Graphics Technologies; transportation analyst, Eagle Global Logistics; transportation manager, account manager, Central Refrigerated Service; transportation manager, corporate, Pacific Cycle.

EDUCATION: BS, public administration, Upper Iowa University; certificate, transportation planning, pricing and costing, University of Wisconsin-Madison; MBA candidate, Marlboro College.

The Big Questions

What do you do when you're not at work?
I go biking, hiking, and camping. I also read a lot.

What's in your backpack?
My laptop and four books. And I live and die by a five-subject notebook.

Technology you couldn't do your job without?
Social networking. I tweet, I just started a blog, I'm on Facebook and LinkedIn, and I use RSS feeds. I rely on those tools to keep in touch with peers, form new relationships, and keep track of world events that might impact suppliers.

"I understand what drives a carrier's profitability, how asset-intensive and expensive the business is, and how those factors and shipper behavior influence price," she says. When carriers add fuel surcharges or detention charges, some shippers scratch their heads, but "I don't have to ask those questions," she says.

Burkhardt and her staff also work on strategic logistics issues. "We analyze and decide on new site locations, and facility size and function," she says.

She might also get involved in site startups, as she did when GMCR acquired Seattle-based Tully's Coffee in 2009. In addition to shifting from one facility to another, the project involved absorbing former Tully's employees into the GMCR organization. Challenges included moving those employees to GMCR's enterprise resource planning system, teaching them new processes, and creating a temporary "mini supply chain" to keep the beans roasting and the finished coffee rolling along to customers throughout the transition.

One key to the project's success was remembering that there's no such thing as too much communication. "Don't assume that anyone knows anything," Burkhardt says. "Put it out there."

Another important lesson she has learned in her career is that it's crucial to think of work in terms of systems, understanding that a single decision may set off a chain reaction of results.

"Often, people do things within silos and only consider the impacts within that silo," she says. "You need to take a broader view and see how those micro decisions affect the greater universe of possibilities." ■

NOTED

THE SUPPLY CHAIN IN BRIEF

m&a

Global freight forwarder **Geodis Wilson** has strengthened its position in the U.S. market by acquiring domestic transportation specialist **One Source Logistics**. The acquisition accelerates the growth of Geodis Wilson's U.S. domestic product offerings, and boosts its cross-border trucking capabilities throughout North America. The new access to a broader local distribution network also enhances Geodis Wilson's inland and final-mile delivery services.

NFI has acquired the West Coast operation of **The Gilbert Company**. The purchase entails six facilities in California's Inland Empire, including four in Chino and one each in Santa Fe Springs and Mira Loma. With these additions, NFI's warehouse space in the region now totals seven million square feet including the company's existing Chino, Ontario, and Perris, Calif., facilities. The company's North American warehouse space now tops 21 million square feet.

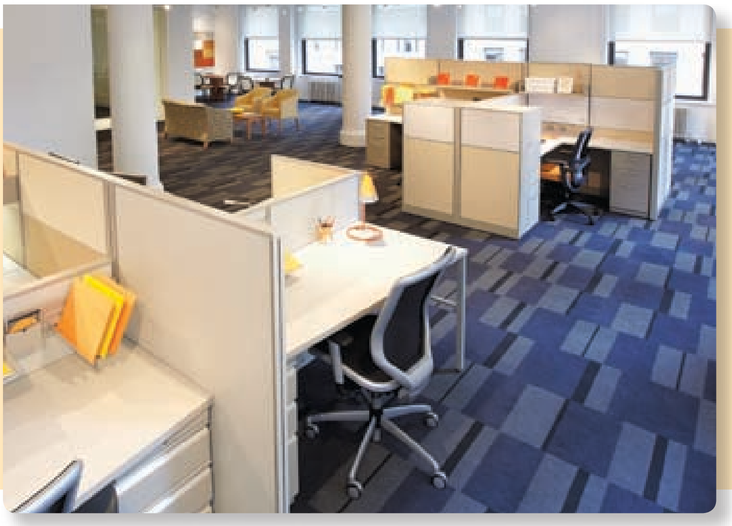
UP THE CHAIN

Brinker International named **David Parsley** senior vice president of supply chain management. Parsley now oversees all aspects of supply chain management, including purchasing, distribution, and quality assurance for Brinker and its two brands, Chili's Grill & Bar and Maggiano's Little Italy.

SEALED DEALS

Behr America Service Parts (BASP), a manufacturer and supplier of original equipment for commercial and passenger vehicles, extended its partnership with **Kontane Logistics.** The joint venture now includes an off-site flow center adjacent to BASP's production plant in Charleston, S.C. The expansion occurred after BASP tasked Kontane with performing all packaging operations for aftermarket components manufactured within Behr's facility.

Handy Hardware, a cooperative of independent hardware supply retailers headquartered in Houston, selected **Averitt Express** to provide dedicated contract carriage services from one of Handy Hardware's Houston distribution centers. Averitt now provides the cooperative with dedicated local and over-the-road transportation of hardware products to retail stores located throughout a five-state region.



recognition

◀ **The HON Company**, a workplace furniture designer and manufacturer, selected global 3PL **Jacobson Companies** as its **2010 Carrier of the Year**. Jacobson began providing truckload services – including inventory transfers, inbound materials to manufacturing, and direct shipments to customers – to The HON Company in August 2001.

LTL carrier **Southeastern Freight Lines** has been named **Platinum Carrier of the Year** by **Lowe's**. Southeastern earned the Platinum award by achieving all the performance goals set by Lowe's, including on-time and claims-free deliveries.

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TRENDS

SHAPING THE FUTURE OF LOGISTICS

Restaurants Change Supply Chain Menus

Rising food prices, increasing transportation costs, and consumer demand for affordable meals are forcing restaurants to squeeze costs from their supply chains. Some chains are looking to offset an estimated four-percent rise in commodity prices internally, rather than simply passing costs along to customers.

by Joseph O'Reilly

Here's a buffet-line perspective of how some restaurants are streamlining their supply chains to become more efficient.

■ **Popeye's.** Popeye's Louisiana Kitchen fried chicken chain was able to trim about $16 million in costs in 2010, bringing franchisees one percentage point of improvement in restaurant operating profit margins before rent, compared with the prior year. The restaurant chain made its distribution more efficient by ensuring every truckload was full, and by negotiating more beneficial, longer-term contracts with suppliers.

■ **Darden Restaurants.** Darden Restaurants, which operates Olive Garden, Red Lobster, and Longhorn Steakhouse, is taking a four-step approach to creating efficiencies and economies: automating its supply chain; centralizing repair and maintenance programs; adopting more sustainable operating practices for energy, water, and cleaning supplies usage; and implementing an in-restaurant labor optimization program. Darden estimates these changes can save up to $130 million.

■ **DineEquity.** DineEquity is working with franchisees at its Applebee's and

IHOP restaurant chains to identify cost reductions. IHOP restaurants are implementing new tools that help portion food to reduce waste, which, in turn, lowers food costs.

■ **Brinker International.** Brinker International is rolling out a "kitchen retrofit" program at its Chili's bar and grill chain. The program optimizes food preparation labor processes, among other efficiencies. This effort is expected to reduce labor and sales costs by eliminating waste, as well as contribute to utility savings through the use of new energy-efficient equipment.

TMW Follows Appian Way

Ease of integration is a must-have when companies consider investments in new technology infrastructure today–especially given the explosion of point-specific solutions and hosted plug-and-play deployments. For the logistics technology market at large, the same premise applies to mergers and acquisitions. Buyers and sellers look for complementary pieces that can be easily integrated–whether its software, market exposure, or customer accounts.

Since 2010, when JDA Software Group finalized its acquisition of i2 Technologies, a flood of consolidation activity has hit the logistics technology marketplace. And the trend continues with Cleveland-based TMW Systems' buyout of Appian Logistics Software.

From a macro-perspective, logistics IT movers and shakers are looking to penetrate more of the small- and medium-sized business bubble. Activity is trundling toward mid-market opportunities where solutions companies can build critical mass quickly

Recycling Post Consumer Waste, Post Haste

Shareholder advocacy group As You Sow will file shareholder resolutions with consumer packaged goods giants Procter & Gamble (P&G) and General Mills to adopt extended producer responsibility (EPR) programs aimed at eliminating post-consumer waste. The proposals will press the companies to collect and recycle product packaging (plastic, glass, metals, and paper) in their U.S. operations.

These new proposals follow As You Sow's successful efforts in convincing Coca-Cola, PepsiCo, and Nestle Waters North America to take responsibility for more than 50 percent of their U.S. product packaging *(see sidebar below).*

The proposals ask P&G and General Mills to report to shareholders on how taking responsibility for post-consumer product packaging can reduce carbon emissions, and air and water pollution, and lead to re-evaluating the way they design, use, and re-use packaging resources and materials. The proposals also ask the companies to take the lead in emerging public policy debates underway in several states on how to manage and finance EPR policies.

"It's time for companies to manage the full life-cycle of packaging as efficiently as they manage design and marketing of products," says Conrad MacKerron, As You Sow's senior director for corporate responsibility. "Taking responsibility for environmental externalities is a key step toward an industrial system of sustainable production and consumption."

Bottling Green

How green can CPG manufacturers get? PepsiCo has developed the world's first PET plastic bottle made entirely from plant-based, renewable resources *(left)*. The new "green" design will launch in 2012 and is expected to significantly reduce the beverage company's carbon footprint. The eco-friendly bottle is made from raw materials such as pine bark and corn husks.

Not to be outdone, Coca-Cola has been using and selling a bottle in nine countries made out of 30 percent sugar cane from Brazil. Coke is also working on converting the remaining 70 percent to a plant-based material. The company's goal is to convert all its plastic bottles to plant by 2020.

More importantly, Coca-Cola has created a new business stream for itself. The company entered into a licensing agreement with HJ Heinz Company earlier in 2011 whereby the ketchup maker will use the "plant bottle" for its products.

through consolidation. With so many new vendors peddling an assortment of on-demand applications, some see consolidation as a necessary growth strategy.

For example, TMW's acquisition of Appian Logistics, headquartered in Oklahoma City, expands the company's logistics and freight management services for third-party logistics firms, courier services, and private fleets in the retail, food and beverage distribution, and restaurant industries.

TMW can now offer last-mile routing and scheduling optimization solutions for dedicated and private fleets with Appian's *Direct Route* software–a complementary addition to TMW's dispatch, fleet maintenance, and transportation business intelligence solutions.

But TMW's real motivation was expanding its customer presence in a new industry vertical–transportation and logistics intermediaries.

It was a strategic move in that "Appian serves a complementary market that TMW does not," says Scott Vanselous, chief marketing officer, TMW Systems. Combined, the two companies now count more than 2,000 unique customers, with about 30 users who overlap. But the majority of Appian's clients are 3PLs and dedicated carriers.

Appian Logistics, which started operations in 1987, originally steered its vehicle routing and scheduling solutions toward private fleets. About 10 years ago, it began targeting the third-party logistics and intermediary market.

"A number of 3PLs were taking over dedicated fleet operations, using our tools to create a bid and determine optimal routes for prospective customers," says Mike Kositzky, president of Appian Logistics. "Then they began installing our software on an operational basis."

From TMW's perspective, the key to this expansion is delivering solutions to that new user base–just as Appian Logistics endeavored one decade ago. Onboarding Appian Logistics' capabilities offers an entrée to sell fleet management solutions to 3PLs, then upsell to other private fleet users. TMW's strategy is to grow organically through acquisition, broadening its product footprint and better integrating its solutions along the way.

Moving forward, Appian Logistics will become a line of business under TMW – TMW Appian – retaining brand equity while operating within the corporate fold. The two companies are currently in the process of creating a future roadmap of how to integrate their fleet management solutions and create new synergies and product offerings by combining their respective resources and capabilities. ■

GLOBAL

THE WORLD AT A GLANCE

by Joseph O'Reilly

High-speed Rail Has German Upside

While the United States continues debating the pros and cons of investing billions of dollars in high-speed rail infrastructure, developing countries with nebulous transportation capabilities are fast-tracking light-rail projects. As a result, German manufacturing and transportation stand to gain the most.

Deutsche Bahn has negotiated with Siemens AG to procure 130 high-speed trains *(right)*, and plans to purchase an additional 90 trains through 2030–a total value of US $8.5 billion. In turn, Canadian aircraft maker Bombardier received a $3-billion contract from Siemens to make shells and other components for high-speed trains in Deutsche Bahn's rail system.

Siemens' key business units include industrial automation, power generation, and transportation. It has seen demand pick up where it has an established presence–notably in Brazil, Russia, India, and China.

In the first half of 2010, 30 percent of Siemens' business was in emerging markets, compared to 19 percent during the 2001 downturn. Beyond building out its physical presence from a distribution and marketing standpoint, the company is also expanding its manufacturing footprint, optimizing global cost structures from a supply chain perspective. Roughly 20 percent of its global sourcing requirements now come from low-cost countries.

Milking Free Trade

Although supporters say free-trade agreements with Colombia, Panama, and South Korea would benefit U.S. dairy farmers and other businesses, the agreements remain in limbo. Agriculture Secretary Tom Vilsack and several farm groups have urged lawmakers to approve the deals, taking their case to the House Agriculture Committee.

Disagreements in the House about whether to consider all three agreements together or individually, as well as opposition from labor unions and a few farm groups, have complicated the deliberations.

(continues on page 22)

(continued from page 21)

Some legislators believe the Korea agreement carries benefits to agriculture and the auto industry–reflected by broader support among interest groups–and therefore demands the greatest priority and most immediate action. The National Milk Producers Federation, representing farmer-owned bargaining cooperatives, and the International Dairy Foods Association (IDFA), which supports makers of cheese and other dairy products, support all three deals.

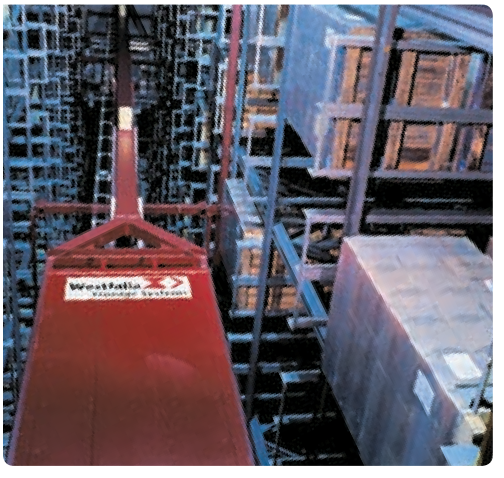
The IDFA estimates that U.S. dairy exports from the Korea deal could more than triple in value, by up to $336 million, and that the agreement is the most important since the North American Free Trade Agreement with Canada and Mexico–although the industry is split on how much benefit dairy farmers have seen from that.

The American Farm Bureau Federation also supports the free-trade agreements. The National Farmers Union is opposed, however, cautioning that free-trade agreements generally hurt agriculture and do not live up to promises of increased exports for U.S. goods.

Euro DCs Blend Form With Function

European warehouses are elevating innovation, inspiration, and sustainability to new heights. Here are two examples:

- Dutch logistics service provider Kloosterboer is managing the largest refrigerated warehouse in France for U.S. frozen potato and finger-food maker McCain. The company decided to build the new warehouse and distribution center close to its production facility to accommodate expanding storage requirements.



In addition to operational savings, McCain's 3PL warehouse supports sustainability strategies.

The single high-density facility, equipped with Westfalia's automated storage and retrieval system and warehouse management system technology, enabled McCain to merge the storage and distribution of eight other regional warehouses.

- German retailer Ernsting recently awarded an automation contract to systems integrator Witron to design a second high-bay warehouse in its network–this time under a glass shell. Witron acts as general contractor, delivering material flow, technology, and the mechanics and steel construction to build the 64,583-square-foot warehouse.

The transparent facade integrates photovoltaic systems–which will convert sunlight into electricity–and is designed by glass artist Nabo Gass to match the retailer's headquarters.

London's Olympic Challenge

London's calling as the site for the 2012 Summer Olympics will present a logistics challenge for shippers moving freight into and around the city. To accommodate restrictions on delivery slots for freight vehicles, the United Kingdom's largest transportation trade association is making a push for more nighttime deliveries.

"The benefits of nighttime deliveries are proven and irresistible; why waste time and money sitting in traffic when you don't need to?" says Natalie Chapman, the Freight Transport Association's (FTA) head of policy for London. "Following extensive trials with Sainsbury's, and our work with the Noise Abatement Society, we know that nighttime deliveries don't have to mean disturbance for local residents."

The association argues that if businesses work nighttime deliveries into their long-term plans, the benefits of transport cost reduction, more reliable deliveries, and lower emissions will far outweigh the initial costs and effort.

The FTA has been working with the Noise Abatement Society to develop quiet delivery techniques that could allow deliveries at times currently restricted due to planning or noise pollution reasons.

"The Olympics will effectively kick-start interest in adopting this practice," adds Chapman. "But our advice to business is to take the long view: this is not a sprint but a long-distance event."

Retailer Sainsbury's has advocated for the UK to lift nighttime delivery restrictions.

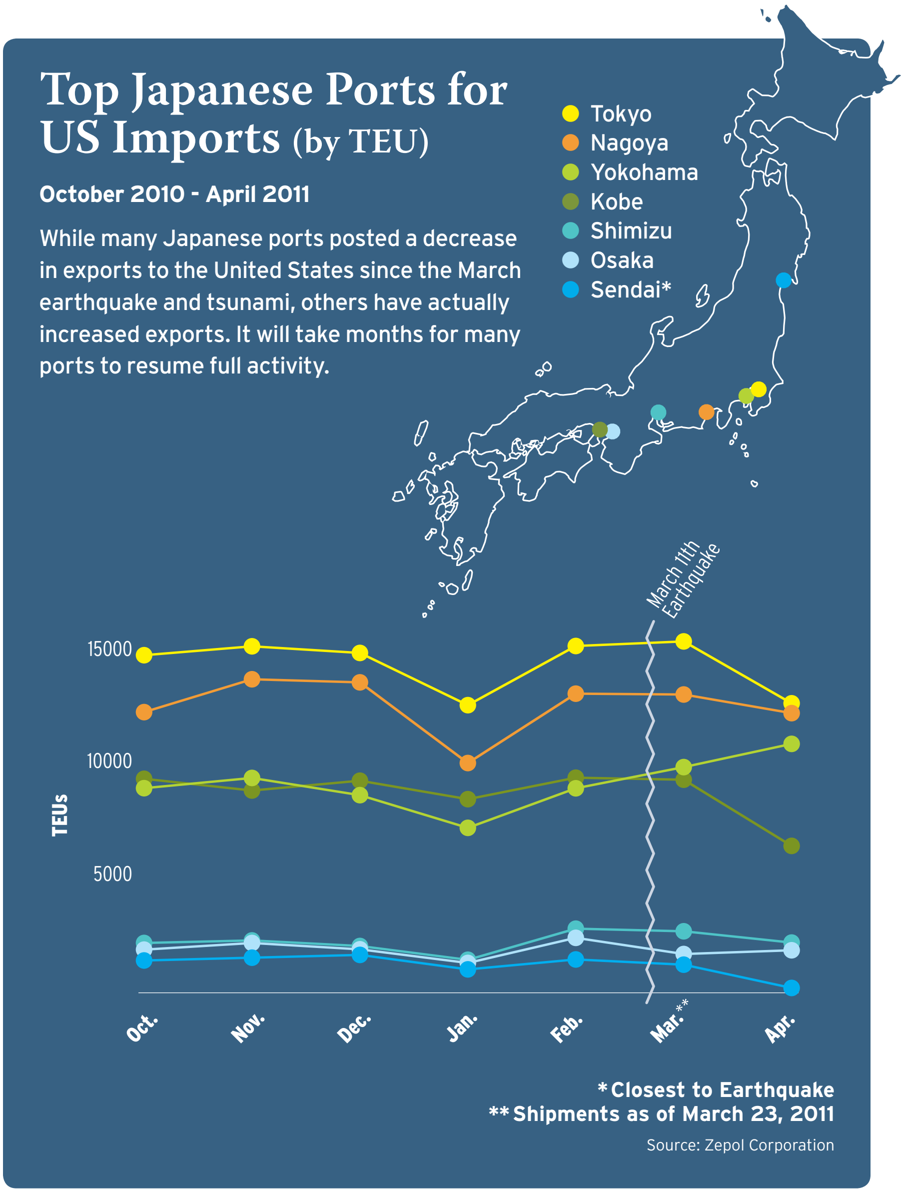
Asian Air Carriers Consolidate

Air China and Cathay Pacific Airways have finally consolidated their cargo businesses with the launch of a new joint venture–Air China Cargo.

Following the consolidation, Air China Cargo's fleet will include 12 B747-400 aircraft and be based in Shanghai. The joint venture's operational scope will satisfy the market demands of the Yangtze River Delta, which makes up two-thirds of Air China's service area.

Additionally, the belly space provided through Air China's extensive domestic and international passenger network is expected to boost Air China Cargo's global business development. The goal is to develop the venture into a China-based air cargo airline with international competitiveness.

The Air China/Cathay Pacific merger comes after the Chinese government made provisional inquiries about the feasibility of consolidating cargo operations with the country's two other main carriers, Air China and China Eastern. China, which has long relied on foreign carriers to fly freight in and out of the country, is making a push to grab a greater piece of global air cargo market share.



Mexico Approves ATA Carnets

Mexico authorities have begun accepting ATA Carnets, enabling shippers and travelers to take advantage of expediting and reducing the cost of bringing goods into the country temporarily. These "merchandise passports" are honored in about 80 countries worldwide, according to the United States Council for International Business (USCIB).

Mexico accepts Carnets for professional equipment, demonstration samples, and trade show goods. A single Carnet can be used to take goods to any accepting country for up to one year, duty- and tax-free, as long as the goods are not sold and leave the country in the same condition in which they were brought in. In effect, the free import pass facilitates doing business with Mexican companies–which has a broader impact in terms of stimulating new business development.

"It should mean a boost for business travel and sales in the country and throughout Latin America," says Cynthia Duncan, USCIB senior vice president for Carnet services.

Suez Trade Rising Amid Uprising

In spite of Middle East volatility and the overthrow of Egyptian President Hosni Mubarak's regime in Egypt, Suez trade shows few signs of slowing down. Cargo carried through the Suez Canal rose 4.1 percent to an eight-month high in April 2011, and yielded the third-highest profit ever for A.P. Moeller-Maersk, the largest container shipping line in the world.

The Suez Canal carries about eight percent of global goods and handled almost 57.8 million metric tons in April, compared to 55.6 million tons in March, according to Suez Canal Authority data. Through the first four months of 2011, average tonnage per month was up 7.3 percent. Rising European demand for Asian products is shoring up container rates, even as global container fleet capacity is expected to expand.

Shipments between Asia and Europe made up 38 percent of business for Maersk's container fleet last year. The carrier sent about 2,000 vessels through the Canal in 2010.

Given the tenuous circumstances following Egypt's uprising, Suez trade growth will be critical to stabilizing the country's economy.

EU Sees Oceans of Green

The European Union (EU) is preparing to include maritime transport in its emissions-trading system or impose charges on carbon discharges from ships should international talks fail to cut pollution.

The International Maritime Organization, created under the United Nations system, has been unable to agree on measures to curb ship emissions. The EU is now pursuing a parallel track to design its own tools to limit industry pollution.

Global maritime transport accounts for almost three percent of carbon-dioxide discharges, and emissions from ships are expected to double by 2050.

The EU emissions trading system–the ETS–is the world's largest cap-and-trade program. Started in 2005, it imposes pollution limits on more than 11,000 utilities and manufacturers, allowing those that emit less than their quota to sell surplus permits. One permit gives the right to discharge one metric ton of CO_2. [ ]

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CARRIERS CORNER

by Simon Kaye

Ports Plug In: Electronic Tracking Tools Create Smooth Sailing for Ocean Cargo

Most ports today compete globally with one another and reflect the tremendous ocean transport productivity gains achieved in recent decades. Choosing a port often hinges on the available technological support for everything from vessel contracting to payment processing. One advantage ports can offer shippers is access to specialized tracking and handling capabilities that add value to cargo throughput.

Electronic systems allow for "vetting" interactions so clearance data flows smoothly from one operational activity to the next. Importers can trust their transactions will be fully transparent and efficient. Such processing should integrate with the shipper's or freight forwarder's electronic tracking system.

TECHNOLOGICAL SUPPORT

Comprehensive real-time electronic tracking capabilities let shippers locate and follow freight, catalog results that can be searched and analyzed, and eliminate the inefficiency and error potential of physically keying routing numbers and freight identification.

Effective electronic tracking systems also enable users to determine shipment status using search criteria such as vendor or consignee identities, country of origin and destination, and, most importantly, a manufacturer's own purchase order and bar-code numbers. The system will also alert shippers automatically that certain key milestones–such as loading, sailing, arrival, and delivery–have occurred or been delayed.

SOPHISTICATED ISSUES

International Commercial Terms (Incoterms), the internationally accepted definitions of trade terms, are an important tracking consideration for sophisticated importers that use Group F terms, under which the seller arranges and pays for pre-carriage in the country of export.

One such term, Free on Board (FOB), dictates that the seller is responsible for delivering goods to the named port, handling export customs clearance, and loading the cargo onto the vessel. Increased supply chain visibility and control is a critical FOB benefit.

By taking control of goods as they go onboard at the overseas port of shipment, importers obtain accurate and timely shipment information, and can invoice the supplier upon confirmed arrival at destination port. Online tracking systems allow users to cross-check and plan their shipments in real time, which is a huge advantage in making such arrangements work.

FILLING IN THE DETAILS

Customs and border protection officials increasingly use electronic processing systems for clearing import shipments at ports. For example, the U.S. Customs and Border Protection agency has developed Importer Security Filing (ISF) rules that require importers to electronically submit security-related shipment information at least 24 hours before goods are loaded on an ocean vessel. The port of choice should offer full technology capabilities for ISF support.

Port capabilities should extend far beyond basic unloading and storage. In-depth knowledge of maritime shipping requirements is inseparable from the forwarding organizations and related technology systems that support such knowledge.

When effectively integrated in any port, these elements facilitate the movement of products quickly, cleanly, and without loss, no matter how far-flung the supply chain. ■

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3PLLINE

by John Rodeheffer

Does Your 3PL Provide 'Golden Rule' Customer Service?

Outsourcing logistics can be hectic and stressful, especially if you deal with a provider more interested in the next shipment than the one en route right now.

Imagine a third-party logistics provider (3PL) that does whatever it takes to fix shipping problems, believes there is no such thing as "just a transaction," and whose drivers smile when they make deliveries and are happy to go the extra mile for your customers. Imagine a company that believes every delivery involves a shipper and a receiver–and a chance to build a trusting relationship.

GO FOR THE GOLD

Sound like a dream? It's one that can come true–with a 3PL company that employs 'Golden Rule' customer service. This means its staff treats others as they want to be treated, from customers to other internal employees to contracted drivers. It's a 3PL that pays carriers on time instead of delaying payment to maximize cash flow, and is aware of the need for financial flexibility in difficult situations.

Golden Rule customer service means honest and transparent communication with people who not only admit when there is a mistake, but head off potential problems with proactive solutions.

Here are some ways to tell whether your logistics provider values and delivers Golden Rule customer service:

- **Browse the company's Web site.** What kind of ethics do the owners say they embrace? Read the Mission and Values statements and check for membership in the local Better Business Bureau and service organizations. Note any local, regional, and even national service awards.
- **Get to know the provider.** What kind of experience does your 3PL have? Does it strive to do the right thing in every dicey situation? Does it push to get positive results for customers and live its values in every decision? A corporate culture establishes itself in every company, no matter the size. The best corporate cultures are intentionally cultivated and reinforced by management – from the CEO to the college intern.
- **Consider the provider's communication policies.** What communications channels are available when weather, mechanical problems, or road conditions delay shipments? Do you have to babysit your provider and worry about your shipment, or are you kept informed throughout the entire life of a load?
- **Talk to your peers.** Ask industry colleagues who they prefer to work with, and what kind of experiences they have had. Have they pulled contracts from the logistics company you work with? Has the 3PL's employees treated others with honesty, integrity, and loyalty? Also talk to carriers. Who do they prefer to take loads from? When a small hauler likes a 3PL, you can bet the company is worth a look.

AT YOUR SERVICE

An upside to this down economy is that the bar to entry in shipping has been relatively low. Many 3PLs formed over the past few years are building substantial business. Don't settle for lackluster customer service when lots of entrepreneurs out there value good personal relationships and aim to do the right thing, in the right way, every day.

Do what's right for your company and your customers, and connect with those in the industry who share your values. Golden Rule customer service companies stand ready to serve you. ■

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IT MATTERS

by Steve Ford

Rallying CFO Support For Your Supply Chain Initiatives

Chief financial officers are not accustomed to making money from the supply chain. Most CFOs, in fact, could use an education on the benefits of supply chain efficiency and visibility.

So how should you approach your CFO to get buy-in for your next major supply chain visibility initiative? Present your case the right way. Here are five ways to engage your CFO.

1. Sell the numbers. Demonstrate your supply chain project's revenue potential, impact on cash flow, or return on investment. The idea of getting a return on your supply chain appeals to CFOs, so provide figures such as number of days of reduced cycle time, savings generated per day of cycle time reduced, and impact on inventory and capital costs.

If I'm handed a plan that maps out exactly how we'll make money, with real quantifiable benefits, I'm on board. Figure out what a full day is worth in your cycle time. If you can show your CFO how much inventory and capital cost savings will be achieved in 10 days, you've got a winning proposal.

2. Define a clear path to operating efficiency. Demonstrate tangible benefits, such as cost and time savings, and product cycle time improvements.

3. Connect the dots. Explain how better supply chain visibility and agility lead to margin improvements and other revenue opportunities. Show how initiatives such as early payment invoice discount programs generate a better return on capital.

Explain that by offering invoice discount programs, you can extend payment terms while removing the burden on suppliers by making cash available in five days, at rates close to five percent.

For example, if a company operates in a high cost of capital market with rates of eight to 12 percent, and sells its receivables while working on 30-day payment terms, or it gets paid in five days on 45-day terms through an invoice discount program at five percent, it doesn't cost one penny more. If a buyer has cash in the bank earning two-percent interest, why not earn five percent or six percent by discounting its own receivables–and then extend payment terms by 10 or 15 days? The resulting cost of goods reduction also improves margins.

4. Present your proposal as an opportunity to partner on a strategic initiative. CFOs and finance executives are often labeled as bean counters and, as a result, may not always be included in strategic initiatives. Your project may be a chance for the finance department to be proactive and provide new value for the company.

5. Break down the barriers. Supply chain and global logistics are considered major priorities in boardrooms worldwide today. The problem is, many CFOs aren't sure how to leverage the supply chain. Breaking down the barriers that have traditionally existed between finance, supply chain, sourcing, or procurement departments is a key milestone in achieving smarter supply chain strategy.

Approaching your CFO is the first step. Provide specifics. Deliver numbers and hard benefits. Give examples. It's in all CFOs' best interests to become involved in the supply chain. Sometimes they just need any entry point or invitation to get started. ■


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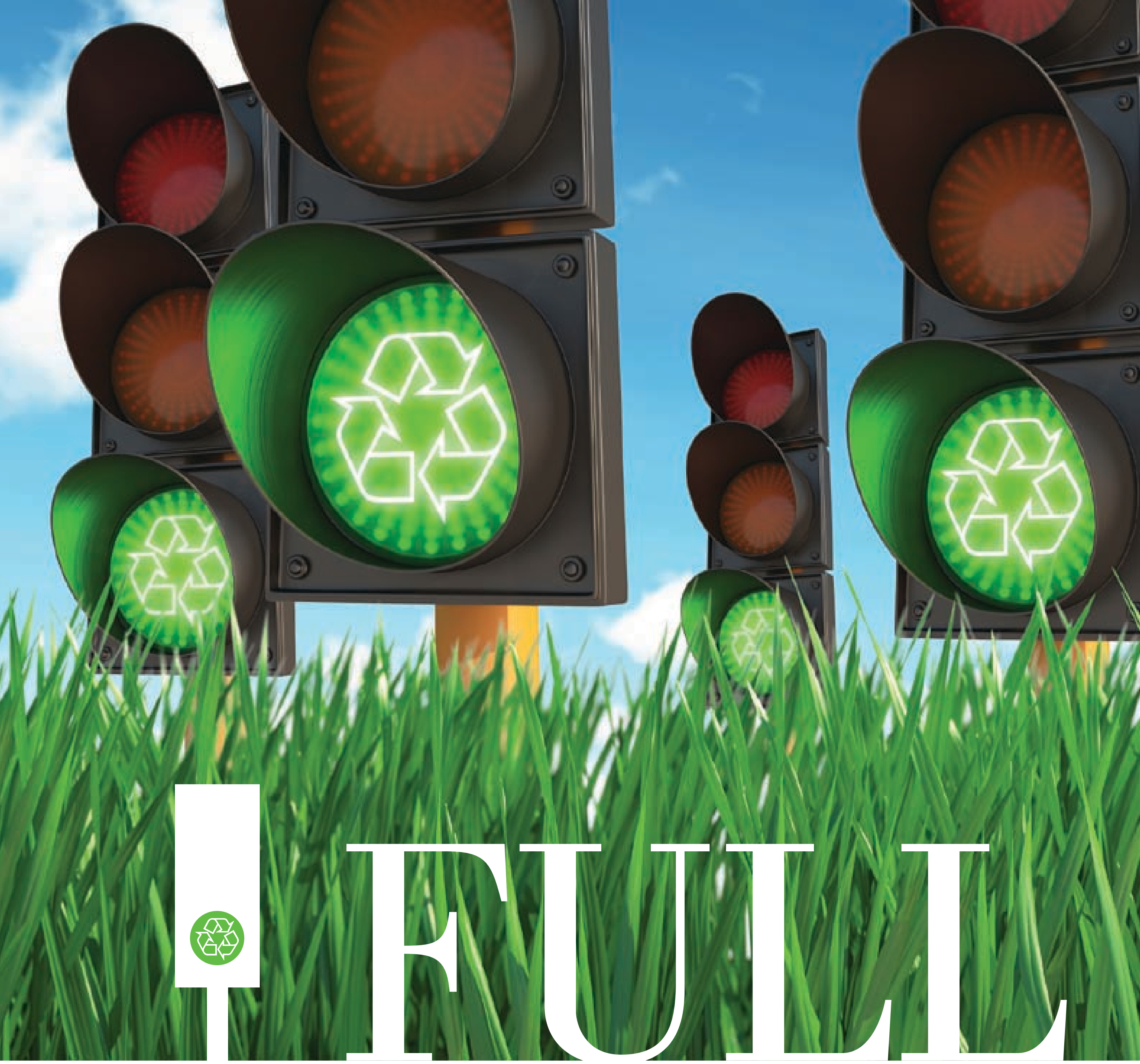
SUPPLY CHAIN SUSTAINABILITY

THE BUSINESS SIDE OF GREEN

When it comes to operating a reverse logistics program, choosing a transport mode, or selecting new supply chain partners, you can go green without going broke. This special section shows you how.



FULL Reverse Logistics

Smart strategies to reuse, refurbish, and recycle products and raw materials not only benefit the environment, but also save money and increase profits.

By Amy Roach Partridge

While companies struggle at times to find ways to make their supply chains more environmentally friendly, one subset of the supply chain stands out as inherently green: reverse logistics. Because reverse logistics by definition includes processes such as remanufacturing, refurbishment, recycling, reuse, and asset recovery, engaging in reverse logistics activities guarantees companies a certain level of green.

"All elements of reverse logistics have green implications," says Jeff Robe, director of marketing for the Reverse Logistics Association (RLA),

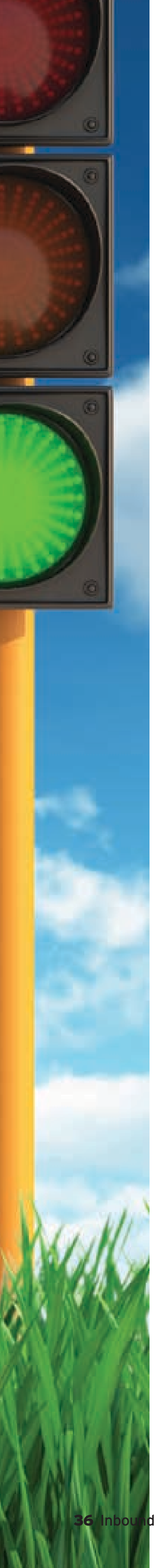
CIRCLE Keeps Products Green to the End

a trade organization focused on educating retailers, manufacturers, and third-party logistics providers about the benefits of reverse logistics. "Reverse logistics addresses questions including: At a product's end of life, can some components be salvaged and reused? Can the materials be ground up, recycled, and made into additional parts?

"Recovering products, refurbishing goods, and pulling out parts such as precious metals that can be recycled or reused are green processes, and they bring a huge benefit to the environment," he adds.

Through effective reverse logistics operations, companies can also cut out inefficient returns processes that result in unnecessary transportation moves, helping to reduce carbon emissions and improve air quality. It is hard to argue against that list of green attributes. But environmental green is only feasible if it doesn't cost too much of the other kind of green.

Contrary to what some logistics professionals suspect, it is possible to manage reverse logistics processes so they are friendly to both the environment and the bottom line.



Good for the Bottom Line, Too

The benefit reverse logistics brings to companies ranges from three to 15 percent of the overall bottom line, according to RLA estimates. Robe cites electronics giant Cisco as a prime example. Partnering with a third-party provider and revamping its reverse logistics processes turned the company's reverse logistics function from a cost center to a profit source. What was an $8-million loss for Cisco in 2005 became a $147-million revenue generator by 2009, according to Rehman Mohammed, Cisco's senior director, customer value chain management.

Another example of green reverse logistics contributing to the bottom line is mobile electronics producer Palm Inc. The company revamped its reverse logistics processes to focus on refurbishing its goods, and now resells them using secondary channels such as an online corporate store and Internet retailer Overstock.com. Refurbishing the returned inventory for consumers, rather than leaving it to be scrapped, benefits the environment and Palm's profitability.

Thanks to the revamp, Palm decreased processing costs by 50 percent, reduced returned goods inventory to less than two weeks, and tripled the product recovery rate. "Now we are often able to receive up to 80 percent of the retail sales price for our returned goods," says Dawn Wang, senior manager of reverse logistics at Palm.

Sometimes, finding a way to make green reverse logistics pay off is just a matter of looking beyond short-term profit motives to long-term business and environmental gains.

"Businesses would not implement green reverse programs if they did not ultimately reflect a bottom-line value," says Dave Meyer, vice president of sustainability consulting firm Sustainable Economic & Environmental Development Solutions (SEEDS) of Vancouver, Wash. "Companies get hung up focusing on short-term horizons instead of a long-term complete product lifecycle perspective," he says, explaining that the initial capital and process reengineering costs sometimes involved in green reverse logistics may scare companies away.

"Companies need to consider collaborative opportunities within their supply chain and their long-term ROI," Meyer says. "They should also weigh the intangible benefits of being green, such

Adding Up Green Gains

It's one thing to talk about the benefits of sustainability initiatives, but the proof is in the spreadsheets. Let's crunch the numbers on three companies' reverse logistics results.

Cisco

STRATEGY: Partnered with third-party provider to revamp reverse logistics processes.

PAYOFF: Transformed an $8-million cost center into a $147-million profit source.

Palm Inc.

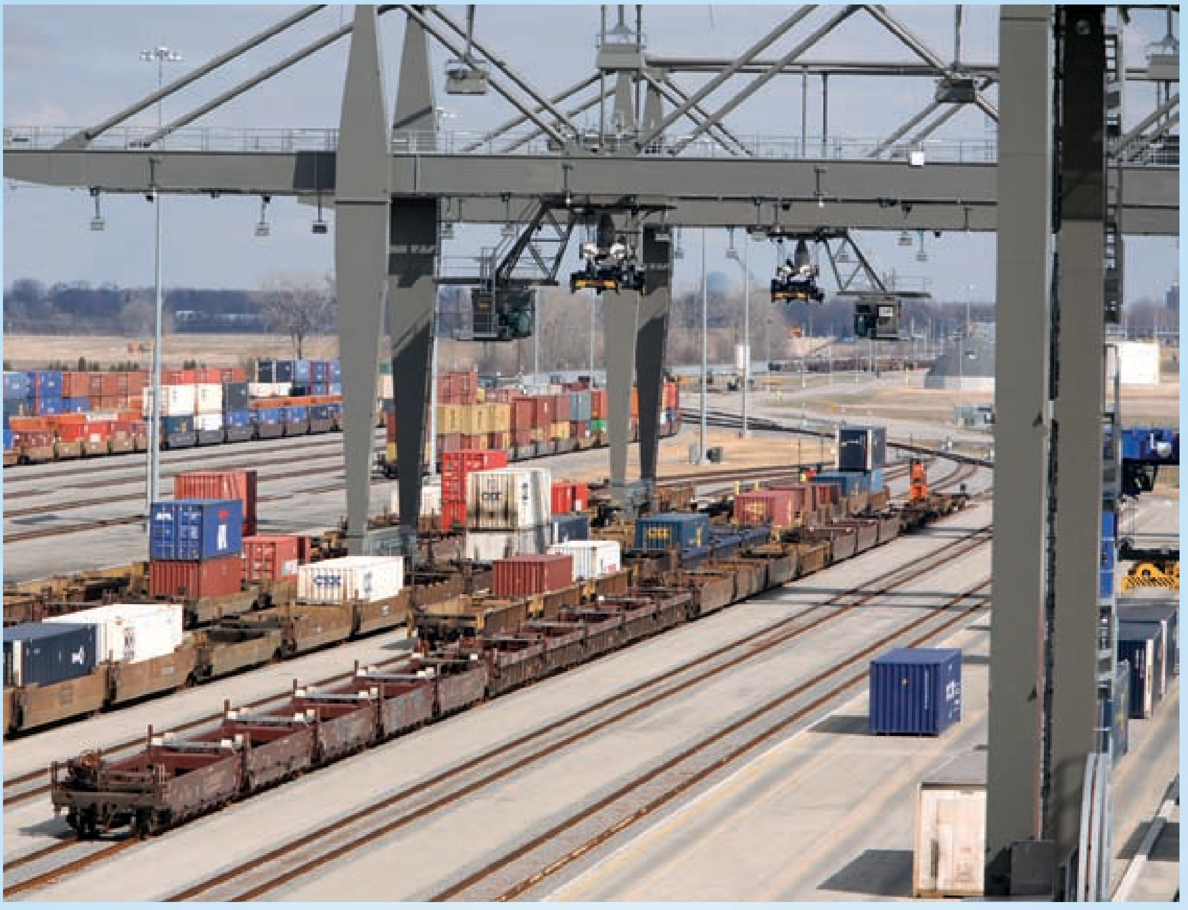
STRATEGY: Focused on refurbished goods for resale in secondary channels.

PAYOFF: Cut processing costs by 50 percent; reduced returned goods inventory to less than two weeks; tripled product recovery rate; receives up to 80 percent of retail selling price for returned goods.

Ericsson

STRATEGY: Redesigned products to reduce operating energy consumption. Reduced product weight and volume, removed banned or restricted substances, and planned for product disposal.

PAYOFF: Decreased product raw materials footprint by 70 times over the past 10 years.



Northwest Ohio

CSX's new intermodal hub located in Northwest Ohio will make you more competitive from coast to coast and throughout the Midwest. As part of the National Gateway initiative, it will provide faster and more reliable service – even bypassing the congestion associated with the Chicago Gateway – while its unique terminal operating system with five wide span ultra-efficient cranes sets new standards in productivity and environmental stewardship.

Contact your Intermodal Sales Representative or e-mail Intermodal_Sales@csx.com for more information.

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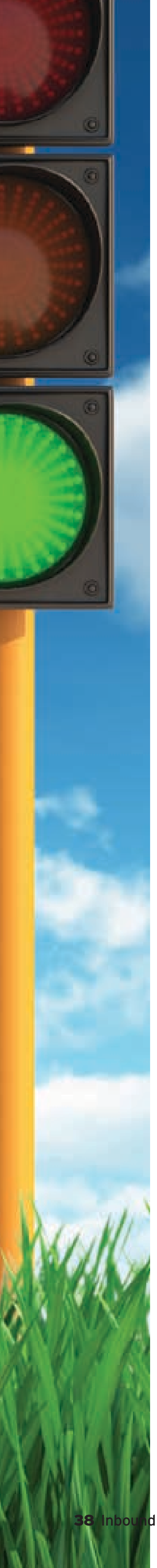


as positive public relations and consumer loyalty."

But it's simpler than that. The very goal of reverse logistics, and what makes it green, is also what makes it smart from an economic perspective: getting rid of waste, which is costly to profits and harmful to the planet.

"The whole idea of reverse logistics is to reduce what is used to manufacture a product; reuse components that can be economically recovered, for as long as possible; then at the end of its life, recycle that product to squeeze maximum life and profit out of it," Meyer explains.

Best Practices Revealed

How can companies get started on the path to implementing green reverse logistics processes that yield a healthier bottom line? Here are a few best practices to follow, from companies and experts who practice what they preach.

Understand Your Product From Beginning to End

The first step is to truly understand the product's impact, from the start of the manufacturing process until the end of its useful life. Although reverse logistics concerns only the reverse half of the supply chain, the implications for its success begin with the forward supply chain.

"Companies need to understand what resources are used in their manufacturing process; whether any of those products are hazardous; which components can and cannot be recovered and reused. Then they need to examine the various waste streams and outputs associated with the process," Meyer explains.

This approach means thinking of reverse logistics at the beginning of a product's lifecycle, and designing with its end-of-life disposition in mind. "Don't take an end-of-the-pipeline solution; start instead with the initial product conceptualization and design," Meyer advises. "Designing a product in a way that reduces the amount of hazardous materials that are used and maximizes the use of those materials so they can have an extended life, will reduce the product's overall long-term environmental impact."

This "designing with the environment in mind" aspect of reverse logistics is key for global telecom supplier Ericsson. The company tweaked its designs to reduce operating energy consumption; reduce product weight and volume; remove banned or restricted substances; and keep product disposal in mind throughout its product development process. The philosophy has helped Ericsson decrease the raw material footprint of its mobile switching center products by 70 times over the past 10 years.

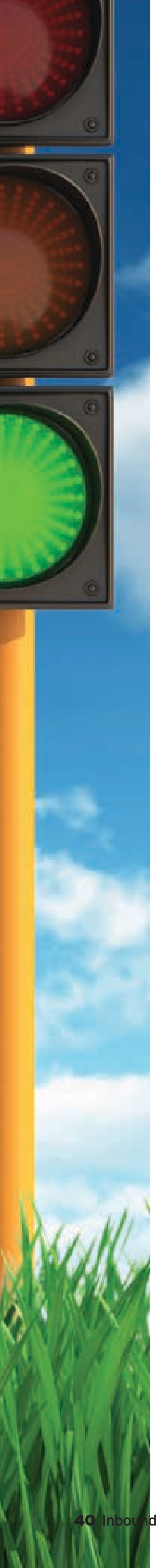
This approach is also key to boosting profitability, because a product design that uses fewer resources and allows for easy reuse or recycling at end of life generally translates into lower overall production costs. Meyer cites the example of a solar panel manufacturer in Portland, Ore. The firm contracted with a local recycling company that collects and reclaims some of the waste, including slurry filter cake and graphite, produced in the manufacture of solar panels. The recycler is able to turn some of that waste into a material that the solar panel manufacturer can reintroduce into its production process.

Be Creative About Finding Value

When products are returned to a manufacturer (or to a third party that handles reverse logistics for the manufacturer) several scenarios usually arise:

- The product is still functional and can be repackaged–or repaired/remanufactured if necessary–and sold as refurbished goods in a secondary market.
- The product no longer functions but can be harvested for parts that still have value.
- The product has reached the end of its life and must be disposed of in some way. At each of these points, companies can be creative about how to find value in the product, while still adhering to green practices.

"One of the greenest parts of reverse logistics is that it turns material that used to end up in the landfill into something useful," says Liz Walker, vice president of marketing and business development for Image Microsystems Inc., an Austin, Texas-based company that provides repair, refurbishment, and reverse logistics services. At the company's depot, for example, it tries to find a value or a use for everything that comes through its doors. This is where it helps to be creative.



Take e-waste plastics–such as the plastic in spent printer cartridges or on cell phone housings. They are a major environmental issue for today's electronics manufacturers because the goods usually "have no value in the downstream recycling supply chain and are burdensome to dispose of," Walker says.

To combat this issue and find additional value for its clients, Image Microsystems has developed a process where it grinds and compresses e-waste material into an earth-friendly material that it uses for sign substrate. "We work with a major computer OEM in Austin that uses these signs–made from its own e-waste–on its corporate campus. It's a unique closed loop," she adds.

Don't Forget About Transportation

While much of green reverse logistics focuses on returned goods and how best to reuse or dispose of them in a cost-effective and environmentally friendly way, the reverse logistics process also has a variety of transportation and carbon footprint implications. Greening returned goods processes but ignoring reverse transportation concerns makes for an incomplete green reverse logistics strategy.

"The procedures required to ensure timely processing and turnaround of returns directly affect transportation," write supply chain consultants Wayne Burgess and Craig Stevens in a recent whitepaper, *Reducing the Environmental Impact of Returns*. The authors advocate a centralized returns process in order to decrease multiple shipments and location transfers.

"Shipping consolidated lots holds clear carbon footprint gains, which are closely matched by a decrease in fuel costs," they say.

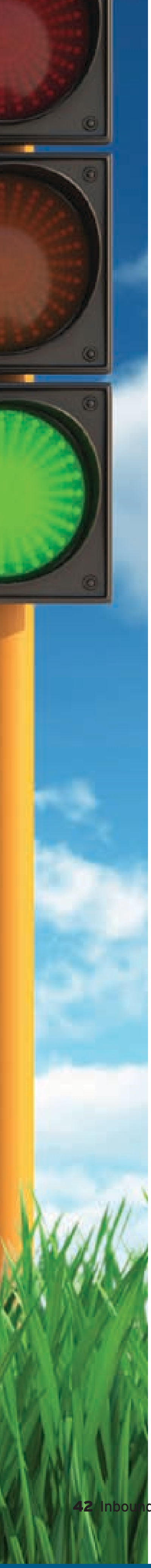
That was certainly the case for a large office supply retailer that partnered with Image Microsystems to gain reverse logistics efficiencies. The company, which sells computers, printers, and other consumer electronics, now ships all its returned products to Image Microsystems' facility, regardless of whether the products are to be repaired, resold, or scrapped.

"We developed software to help the retailer analyze–right at the point of return–what needs to be done with that product, so it does not have to ship products to different facilities around the country depending on the work required," Walker explains.

If a product has to be scrapped, Image Microsystems handles that process; if the product can be resold, the company becomes a virtual store for the retailer, fulfilling orders out of the refurbished inventory it holds for the retailer. "This takes several legs out of the reverse journey, and prevents the retailer from incurring extra carbon footprint and transportation costs," Walker notes.

Ultimately, whether it is the actual products being returned, or the process by which a company returns them, reverse logistics can–and should be–both green and cost-effective. "The benefit to green reverse logistics is tangible," says RLA's Jeff Robe. "Most companies are realizing that being green means being more profitable, too." ■

Image Microsystems technicians inspect returned electronic devices to determine whether the products should be repaired, resold, or scrapped.



CASE STUDY | Philips Consumer Lifestyle

Sustainability + Profitability = Total Reverse Logistics Efficiency

Consumers who purchase a Sonicare toothbrush, decide after a few uses that it's not for them, and return it, probably never think about what happens to that product after they receive their refund. But for Philips Consumer Lifestyle–maker of Sonicare, Norelco shavers, Avent baby products, and a variety of consumer electronics goods–what happens to returned products is crucial to the bottom line and to its sustainability goals.

Because of the nature of their use, returned products such as toothbrushes, shavers, and baby bottles cannot be resold and must be disposed of. But just heaping them in a garbage dump does not meet Philips' zero-landfill goal. To make sure its products do not end up in landfills, Philips works with third-party logistics provider Ryder Supply Chain Solutions to select partners that can provide proper disposition.

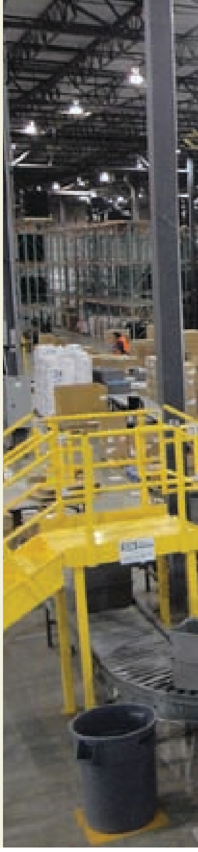
"Our zero-landfill goal is critical when selecting partners," notes Tony Sciarrotta, senior sales manager for Philips Consumer Lifestyle. "We don't want a partner to put our products in a dumpster."

Sciarrotta's division also has stringent environmental guidelines for handling returns of its consumer electronics goods. Together with Ryder, it has crafted a reverse logistics process that helps it refurbish, reuse, and resell nearly 80 percent of these returned goods.

Because most of the finished goods returned to Philips Consumer Lifestyle still function well, the key emphasis is on repackaging and reselling these products as refurbished goods–and doing so in a cost-effective and green manner. Returned products are shipped to a 500,000-square-foot facility in Groveport, Ohio, which Ryder operates for Philips Consumer Lifestyle.

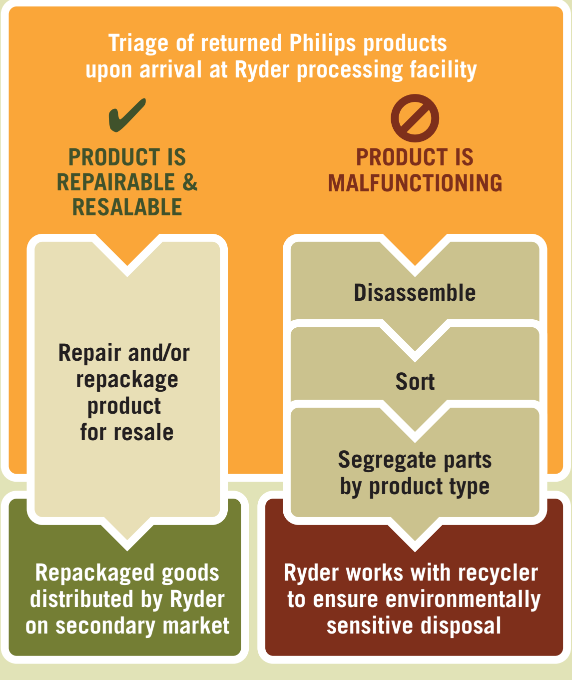
There, Ryder runs a triage operation to determine if goods are resalable or malfunctioning, and whether it makes business sense to repair them for resale, or dispose of them (*see chart*). If they are to be resold in a secondary market, Ryder manages the distribution of those repackaged goods. If they can't be resold, Ryder disassembles, sorts, and segregates parts by product type and works with the recycler to ensure they are disposed of in an environmentally sensitive way.

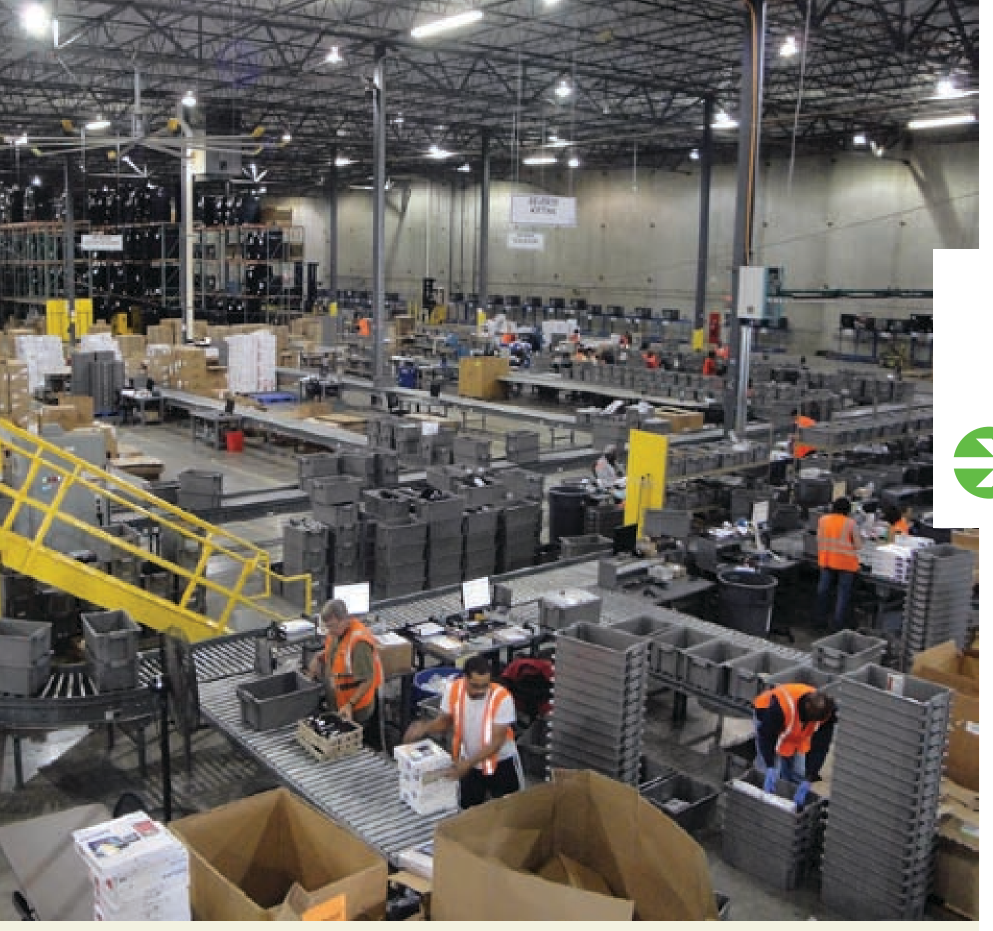
"Our goal is to determine the greatest value Philips Consumer Lifestyle can get from its returned assets, and execute in a green-friendly fashion–as quickly and cost-effectively as



Philips Consumer Lifestyle's Product Returns Route

Most of Philips Consumer Lifestyle's returned goods still function well, so the company relies on third-party logistics provider Ryder Supply Chain Solutions to handle returns correctly. To ensure consistency, a technology solution guided by business rules determines how to direct the returned product through each step in the reverse logistics process. Here's how it works.





The processing facility Ryder Supply Chain Solutions manages for Philips Consumer Lifestyle focuses on repairing, repackaging, and reselling products as refurbished goods.

possible," says Chad Burke, director, supply chain excellence for Ryder. To that end, Ryder developed an IT solution with business rules that govern when goods should be set up for resale or put through the disposition process. "We make a business decision on returned products based on their cost and retail sale price point," Sciarrotta explains. "A product that sells for less than $100 at retail, for example, is not worth refurbishing."

The IT solution has increased the velocity of reverse logistics for Philips Consumer Lifestyle, and brought much-needed transparency to the process. "The system gives Philips immediate visibility to what is being returned, when credits have been initiated, and what path those products will take, as well as a feel for the amount of refurbished inventory it has on hand," Burke explains. "This visibility to the whole process helps the company make better decisions and lessens its impact on the environment."

Ryder also handles reverse transportation for Philips Consumer Lifestyle, consolidating product returned from retailers to "reduce the number of trips, and the associated carbon footprint and costs," notes Norm Brouillette, Ryder's group director, supply chain solutions. Having Ryder handle both the reverse logistics processes and forward distribution of repackaged goods out of its Grovepoint facility allowed Philips Consumer Lifestyle to cut its transport costs and fuel use, and leverage its building's carbon footprint.

"Rather than have a separate third party handle distribution and incurring duplicate transportation and carbon footprint costs, we do everything in one facility and cut down on the need for multiple shipments," Brouillette explains.

As an additional green benefit, Ryder uses recycled cardboard and paper rather than petroleum-based products when it repackages and ships returned goods to secondary sales channels. "At our request, they try not to put anything into the waste stream that has a negative effect on the environment," Sciarrotta says.

"We view reverse logistics as the ultimate recycling process," he adds.

Reverse Resources

For additional information on green reverse logistics, consult the following reports and whitepapers.

Maximizing Recovery While Minimizing the Environmental Impacts for Reverse Logistics

By Paul Rupnow, Reverse Logistics Association

Reverse logistics industry leaders offer strategies, tactics, and insights to maximizing recovery while minimizing environmental impact.

http://bit.ly/mU31Oz

Green Logistics: Sustainable 3PL Practices for Reverse Logistics and Asset Management

By GENCO ATC

This resource explains the green benefits of reverse logistics and offers tips on determining when to refurbish products and selecting a 3PL for reverse logistics and asset management.

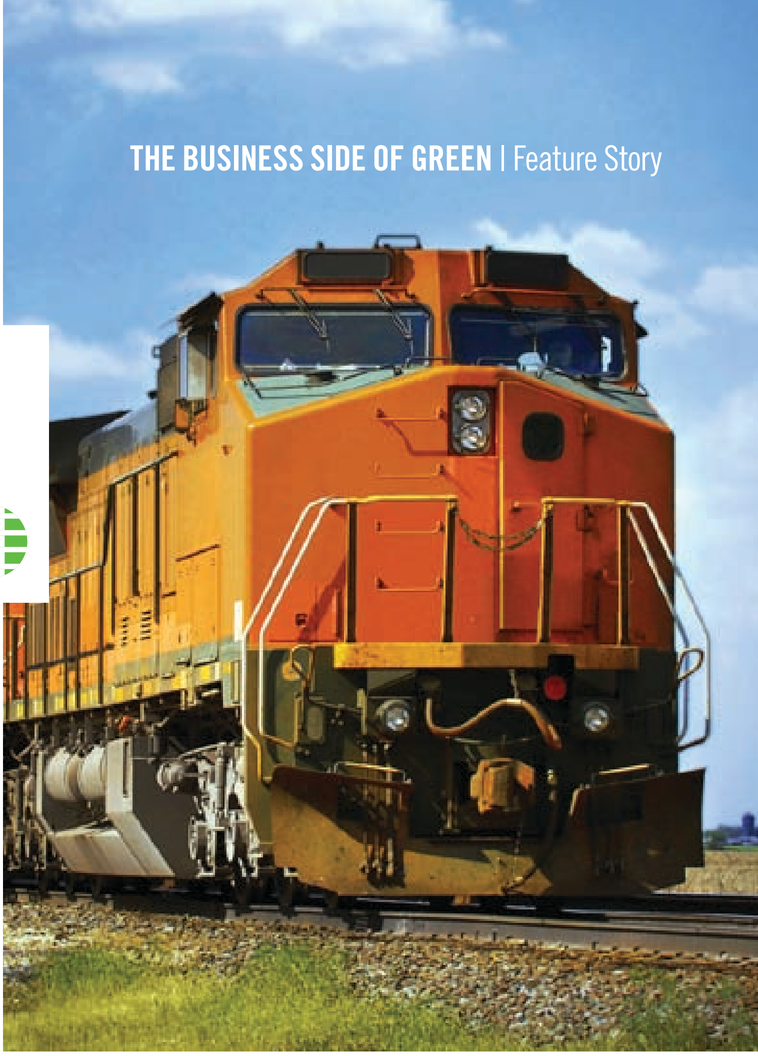
http://bit.ly/lT6KHX

Reducing the Environmental Impact of Returns

By Wayne Burgess and Craig Stevens, partners, ReturnTrax

This whitepaper examines the areas of environmental concern regarding returned goods, and proposes mechanisms and programs to minimize the impact.

http://bit.ly/j8Q2Af

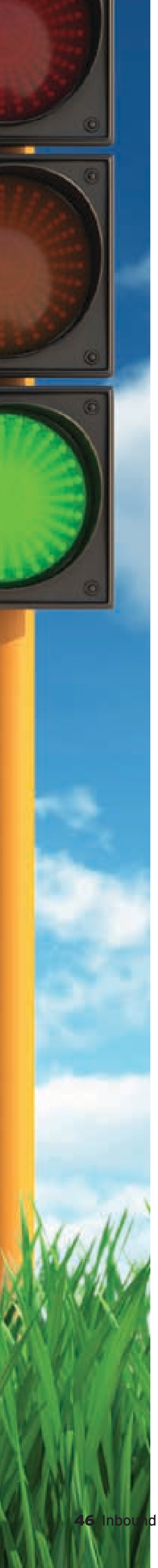


GREEN ON THE GROUND

When comparing environmental sustainability solutions, which ground transport mode is greener?

By Perry A. Trunick

Environmental sustainability has become a central issue in the transportation and logistics sector. While consumer transportation experts debate gas-electric hybrids, alternative fuels, or straight electric-powered vehicles, logistics professionals must make sense of claims from transport providers in all modes touting improved efficiency, lower costs, reduced emissions, and a smaller carbon footprint. On the high end, air is the most fuel-intensive mode; on the low end, pipelines are significantly limited in what they can carry. In the middle fall ocean, inland waterways, rail, and truck.



For non-contiguous international moves, the choice is simple. If your shipments have to cross an expanse of water, you must use air or ocean.

That focuses the sustainability discussion on domestic moves, or the domestic portions of international moves. And that discussion can grow loud when arguing the sustainability and environmental impact of using truck versus rail.

CSX, along with others in the rail industry, repeatedly voice this simple claim: "Trains can move one ton of freight nearly 500 miles on a single gallon of fuel. Efficient use of fuel means less greenhouse gases or carbon emissions for our planet."

Voices grow louder when the railroads pit their performance against trucks. "The Environmental Protection Agency (EPA) estimates that moving freight by rail emits three times less nitrogen oxide and particulates per ton-mile than highway transportation," CSX says. "Shifting 10 percent of long-haul freight from the highway to rail would reduce annual greenhouse gas emissions by more than 12 million tons."

Sounds good. But then CSX adds, "Railroads are the most environmentally friendly way to move freight across land."

As motor carriers are quick to point out, not only do trucks carry 70 percent of the freight that moves in the United States, but railroads don't reach 80 percent of communities across the country – which clearly contributes to the first-mile and last-mile portion of a freight move that accounts for some of this 70-percent claim.

Collaborating for Sustainability

Applying rules of thumb can be a simple way to narrow a discussion and approach a solution. For example, you can compare the actual or projected benefits of making "greener" transportation decisions in many ways.

Railroads tout themselves as a positive force in reducing emissions, claiming they can move one ton of freight nearly 500 miles on one gallon of fuel.

Burlington Northern Santa Fe Railway offers this comparison: using one train to haul 123 trailers between Los Angeles and Chicago by rail is 2,200 miles. By long-haul truck, it's 2,015 highway miles.

But the big difference is fuel consumption: 19,400 gallons of diesel for rail; nearly half the 38,100 gallons estimated for trucks making the same moves. The result is that the rail move produces 288 fewer tons of CO_2 emissions than the trucks required to move the same freight volume.

The actual results can shift with a number of variables. Cleaner fuel types, for instance, can have an influence. To the degree trucks can use lower-sulfur diesel or alternative fuels or fuel blends, they can improve the average. Newer, cleaner-burning, less-polluting engine technology can also reduce emissions.

One question the rail numbers beg is whether or not they include the dray move necessary to complete the delivery of the example 123 trailers. If deliveries average 25 miles, that's 3,075 miles by truck on the destination side. Assuming some older, less-efficient trucks moving in more congested routes average 4.5 miles per gallon, that could add 683 gallons of fuel consumed by the dray. That puts the rail consumption at slightly more than 20,000 gallons; still substantially less fuel consumption than trucks on a port-to-door move. And, even with some higher emissions from less-efficient dray vehicles, it may only add another six tons of CO_2 emissions to the rail side of the example.

Assuming railroads had the capacity to convert another 10 percent of truck moves to intermodal, fuel use could be reduced by about one billion gallons per year. The fact is, motor carriers are willingly shifting larger volumes of long-haul moves to rail. The National Master Freight Agreement, which expires in less than two years, limits the volumes that could be shifted to intermodal by unionized carriers party to the agreement.

If you want a truck vs. rail argument, you'll find a heated one. But if you want efficiency, cool the claims and counter-claims, and look for opportunities to cooperate and collaborate. And that's really where the modes are when it comes to dealing with the freight community. Generally, rail works best for long-haul, volume moves of commodities such as bulk and aggregates. For other commodities and types of moves, a variety of factors enter into the modal decision. The combination of long-haul efficiency and close-in adaptability helps optimize the freight move and its environmental impact.

For all their posturing over environmental impact, railroads and truckers actually work well together. For example, like many motor carriers, Ann Arbor, Mich.-based transportation provider Con-way has been steadily increasing its use of rail intermodal.

"But don't turn our use of rail into a 'green' argument," says Randy Mullett, Con-way's vice president of government affairs, "because the shift is occurring for a combination of reasons."

Carriers and third-party logistics providers strongly committed to environmental sustainability and reducing their carbon footprint admit shippers don't always share their attitude. Sustainability initiatives and key performance indicators are often part of shipper requests for proposals, but their absence is largely not a deal breaker.

Companies whose customers have a strong commitment to driving sustainability initiatives up and down their supply chains will be more diligent about ensuring the carriers and logistics providers they use

With fuel prices as an incentive, and some externally imposed limits lifted, could motor carriers approach a 10-percent conversion level? And, given that these are trailers, not containers, do U.S. railroads have the capacity to handle those loads? (Most rail routes can handle double-stack containers, but trailers represent a single tier.)

Railroads are undertaking additional initiatives, including lower-emission engines, fuel cell technology, and changes in switching engine operations. And where trucks have lower rolling-resistance tires, rails are adding lower torque wheel bearings. Everyone is trying to shed weight in car, trailer, and container construction.

But, what is gained in one area could be lost in another. Proposed federal hours of service rules would reduce truck operation efficiency. Rails are also subject to their own similar set of rules, but the impact of reduced hours on truckers could be far more dramatic. Just as the mode is making gains in reducing fuel consumption and emissions, it could find it necessary to put more trucks on the road to haul the same volume of freight under the new regulations – and volumes are projected to increase, not stay the same.

By limiting idling times for vehicles; installing properly inflated, lower resistance tires; using lighter, more aerodynamic trailers; reducing speeds; and using more longer combination vehicles, truckers are mounting aggressive efforts to reduce fuel consumption and emissions. The industry points to the need for a revised set of size and weight rules that could improve efficiency and performance.

Outside the vehicle itself, truck fleets are using routing tools to reduce out-of-route miles while also adopting strategies to improve equipment utilization and cut empty miles. Dedicated contract fleet operators are offering "dedicated capacity" to make better use of fleet assets, and private fleet operators are reviewing compensated inter-corporate hauling opportunities to fill their own empty miles.

On the soft side of the argument, reducing the time drivers spend waiting to load or unload better utilizes their available hours and contributes to productivity. Reduced packaging lightens the loads and can improve fuel efficiency. And all the efforts to reduce energy consumption at truck and rail terminals, and within warehouses and DCs, figure into the supply chain's overall carbon footprint.

Everything from plastic pallets and load consolidation to better dock labor planning and improved routing add to what is accomplished in long-haul freight movements, whether by road or by rail. The question boils down to, "How can we make the entire supply chain more efficient?" The answer is not to abandon one mode for another, but to collaborate and optimize.

A freight imbalance between northern and southern Florida results in empty backhauls for truckers. It's more environmentally friendly for Florida East Coast Railway to move those shipments.

are pursuing environmental sustainability.

But for others, the requirement has been described as "almost perfunctory." Few companies are willing to engineer for sustainability or pay more for green. That isn't a new development; the attitude precedes the recession and has continued into the recovery.

There are exceptions, however. Some industry sectors have adopted stronger positions on environmental sustainability. Regional differences also come into play, especially in global supply chains.

In a study for the Academy of Marketing Science, Nathan Meacham, Cheri Speier, and David Closs of Michigan State University's Eli Broad College of Business present four dimensions of sustainability: environmental, ethical, educational, and economic.

The study reports that employing effective, globally sustainable enterprise strategies can result in:

- Increased profit through significant operational efficiency gains–reducing global waste and cost.
- Enhancement of people and their communities–commitment to acceptable global working conditions and compliance with regulatory requirements.
- Minimizing reliance on scarce environmental resources–water and raw materials–while minimizing waste, thus ensuring long-term global viability.

Taking this broader approach to defining sustainability puts environmental efforts into perspective. "Further, there is a widening belief that managing the triple bottom line–focusing on economic, social, and environmental performance (profit, people, planet)–will lead to improved efficiency and profitability over the long term," the study reports.

So, environmental sustainability is part of a larger strategy to build a sustainable company with sustainable results and profits. Much of this is due to eliminating waste and improving supply chain efficiency.

Intended Consequences

Where does that leave the truck vs. rail argument? Without "green washing," carriers have to be saving ton-miles, says Mullett. Better equipment utilization is one opportunity. Not only do carriers look for ways to put more freight in trailers and containers, they are using technology to reduce vehicle weight to allow more freight to be carried. Simple technologies start with using lighter materials to construct trailers, and designing tractors and trailers with more aerodynamic profiles.

While these and other design and construction techniques have provided some improvement, Mullett says it is increasingly important to reexamine size and weight limits to achieve even greater savings. That's an argument that becomes both politically and emotionally charged, and not only between motor carriers and railroads. But, with fuel prices rising and falling with greater frequency, and plateauing at an incrementally higher level at each drop, the size and weight limits issue will stay on the table for motor carriers.

Con-way uses approximately 150 million gallons of fuel per year–the company's single largest operating expense, Mullett notes. When the carrier takes steps such as setting its fleet's speed controls back five miles per hour, it realizes a savings of six million gallons of fuel. That's the equivalent of taking 15,000 cars off the road for one full year, he adds. In the broader sustainability model presented by the Academy of Marketing Science's study, there's also an impact on helping to sustain the carrier's profits.

As if Con-way's consumption isn't a large enough number, the trucking industry will consume more than 35 billion gallons of diesel fuel in 2011 and is on pace to spend $135.8 billion. That's about $35 billion more than the industry spent in 2010, noted Bill Graves, CEO of the American Trucking Associations, in recent congressional testimony.

Companies participating in the EPA's SmartWay program have saved more than 50 million barrels of oil since 2004, helping businesses cut fuel costs by $6.1 billion. SmartWay equates the fuel savings to taking three million cars off the road for one full year.

The average length of haul for trucks has been decreasing. "Only 13 percent of truck trips are longer than 500 miles," Mullett notes.

Some of that decrease may be due to the trend by shippers to site more and smaller distribution centers closer to end markets, but it also reflects the times. Long-haul trucking is challenged by extremely high labor turnover rates, and a critical driver shortage. With freight volumes expected to increase 30 percent by 2020, that problem will only grow worse.

The Intermodal Option

Long-haul drivers are becoming a less sustainable workforce. So, when coupled with the environmental efficiency of rail and lower fuel costs contributing to more sustainable profits, rail intermodal is a good fit for motor carriers.

Motor carriers are some of the railroads' biggest customers. And that's true not only of the large Class I railroads but also of Jacksonville, Fla.-based regional rail carrier Florida East Coast Railway (FEC), which counts motor carriers as a major part of its business.

"The 351 miles the railroad covers from

Jacksonville to Miami suffer from significant freight imbalances–one northbound load for every four southbound loads," notes Husein Cumber, FEC's executive vice president for corporate development. "Truckers can go into south Florida with a load, but because it's not a manufacturing center, not as many loads come out of the region."

One train can haul the equivalent of 280 trucks. Because the majority of those return trucks would be empty, having FEC carry the freight substantially improves fuel savings and environmental impact. "It's a win for both modes," Cumber says.

Florida East Coast Railway's geographic advantage goes further. The Port of Miami is making a series of investments that could improve its position as a gateway port: extending its on-dock rail connection and other rail capabilities, and dredging its ship channel to 50 feet. That makes way for more ocean traffic from the larger vessels that will be able to transit the Panama Canal after its expansion is completed.

These improvements could make Miami more attractive to ocean carriers who might make it their first port call on the U.S. East Coast after transiting the Canal, Cumber notes. South Florida is a large consuming market, so those carriers are likely to have destination cargo for the region.

But, with improved rail intermodal capabilities to move containers up to Jacksonville or Atlanta where they can connect with truck or rail to reach other inland destinations, Miami could improve its position as a gateway port.

Moving cargo from efficient ocean vessels to efficient long-haul rail clearly fits environmental sustainability goals. An additional benefit comes from ocean carriers reducing their port calls to one Southeast port and one Northeast port. A number of East Coast ports have signed agreements with the Panama Canal Authority and are positioning for the potential growth resulting from larger ships coming from Asia to the East Coast via the Canal. But, Cumber notes, Miami is currently the only port south of Norfolk with funds committed to deep-dredging its ship channel. That could make it attractive to the ocean lines.

Motor freight carriers such as Con-way are going green by actively participating in the EPA's SmartWay program, enforcing stringent truck idling restrictions, and installing speed governors in vehicles.

It's not only carriers who are focusing on green logistics. Dallas, Texas-based third-party logistics provider Transplace, for example, was an early adopter of selecting carriers participating in the EPA's SmartWay program.

"The importance of selecting SmartWay carriers depends on each shipper and its customer base," notes Kyle Alexander, director of strategic carrier development for Transplace. "Demand for SmartWay carriers gathered steam when shippers encouraged supplier participation and began scoring them on sustainability issues."

Transplace encourages customers to participate in SmartWay, and sees a benefit in pushing the environmental agenda in both directions along the supply chain.

Some carriers were reluctant to take the plunge, says Alexander, but due to consumer, market, and customer pressure, it has become mainstream. In some ways, he continues, SmartWay is becoming a victim of its own success as it tries to cope with the substantial growth in certification requests. Currently, 65 percent of the shipments Transplace handles move on SmartWay carriers, Alexander estimates. In 2006, they were in the 50 percent range.

Key Drivers

If shippers are key to driving the move to more environmentally sustainable transportation, does it have a direct benefit? For those with private fleets, fewer miles and lower fuel consumption pay direct dividends. Increasing asset utilization by filling backhauls with brokered loads clearly offers revenue contributions as well.

But even for those shippers using only for-hire transportation, there are some benefits to choosing sustainable carriers, Alexander points out. In many cases, having a sustainability strategy and making use of programs such as SmartWay can open up new market opportunities serving customers who measure environmental initiatives.

Shippers also recognize the importance of carrier compliance, which reaps hard and soft rewards. Hard rewards include increased business with environmentally conscious carriers. On the softer side, some shippers offer more beneficial fuel surcharge programs for SmartWay carriers. They recognize that SmartWay carriers have invested in tools, technology, and processes to improve efficiency.

Environmental sustainability is good business for logistics. And good business practices yield improved environmental impact through greater efficiency, improved use of assets and resources and less waste. That contributes to a better working environment for workers and a sense of pride. It also translates into lower costs and better profitability. All along the supply chain, the impact of the four dimensions of sustainability–ethics, environment, education, and economic –make a positive contribution.

The ultimate question is not whether truck or rail is greener; the question is how to make the whole supply chain greener. Using each mode and combination of modes more effectively contributes to a greener, more sustainable supply chain, which has a wider impact on the environment we all share. Looking at it that way, in the truck vs. rail debate, we have to declare the supply chain the real winner. ■


GEODIS
wilson

From 3PLs to air cargo carriers, ports to truckers, *Inbound Logistics* gives the green light to supply chain visionaries who every day demonstrate their commitment to sustainability.

75 Green Supply Chain Partners

AEP River Operations

AEP River Operations began its SEE GREEN recycling project in 2008. Since then, it has recycled more than two barge loads of products from its boats. All AEP River Operations towboats – from West Virginia to New Orleans – are currently participating in recycling all, or a portion, of their onboard waste. Going one step further, AEP has also recycled 70,000 pounds of vessel mooring lines, which would have packed landfills or endangered boats by getting tangled in their propellers.

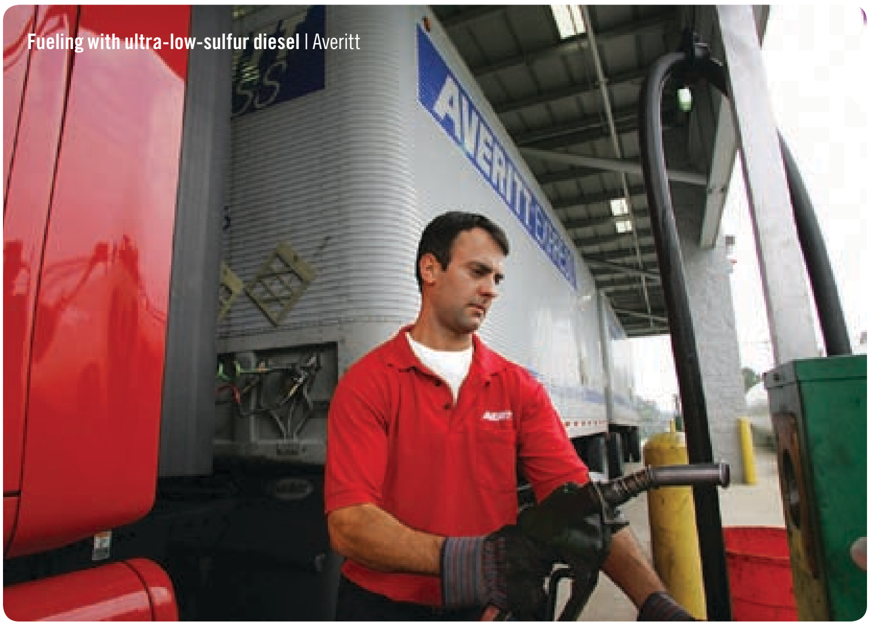
Agility

Global 3PL Agility has demonstrated its commitment to sustainability by releasing its first corporate social responsibility (CSR) report, which reviews its CSR commitments to date, and highlights progress and priorities for the future. Agility has developed and employed a number of tools to help shippers determine how to measure and reduce their supply chain operations' environmental impact, and has established a global program to improve employee awareness about the environment. In addition, Agility is a strategic partner of the World Economic Forum, where it participates in various environment-related working groups.

Aspen Logistics

Aspen reduced power and pollutant gases by retrofitting all its facilities with high-efficiency fluorescent lighting, and received an Environmental Stewardship Award for this project. The company also conducts routine refrigeration systems maintenance to prohibit the release of CFC into the atmosphere. All paper, cardboard, used pallets, and printer supplies are recycled. In addition, Aspen tractors are equipped with emission control reduction components, and certified to operate according to California Air Resources Board regulations.


Reduced-emissions tractors | Aspen Logistics



Fueling with ultra-low-sulfur diesel | Averitt

Averitt

Averitt is taking steps in every area of operations to reduce its carbon footprint and find better, more environmentally friendly ways to conduct business. The 3PL uses only ultra-low-sulfur diesel at its in-house fueling stations, and employs low-emission diesel tractor engines. For vehicle maintenance, Averitt uses low-viscosity lubricants and engine oils, which reduce the frequency of maintenance service intervals, therefore producing fewer waste products. The company also employs recycling operations at all facilities.

Cardinal Logistics Management Corporation

To ensure Cardinal's operations are as environmentally safe as possible, it has taken steps such as improving its fleet with new, lower emissions equipment; using speed governors, auxiliary power units, and idle shutdown and other modifications to reduce fuel usage; and implementing a recycling program at its facilities. It has explored alternative fuels, trained drivers on proper maintenance and driving habits, and offered them incentives for low fuel-usage rates. Cardinal has also been able to reduce miles and provide backhaul support. Furthering its commitment to green, the company's proprietary technologies help lower fleet emissions by reducing miles, and monitoring for efficient performance.

Recycling program | Cardinal Logistics

Cat Logistics

Sustainable development is ingrained in Cat Logistics' culture and business practices. Since it released its sustainable development Vision 2020 goals in 2008, Cat has constructed all new facilities to LEED-certified specifications, and conducted lighting renovations in various facilities around the world. Since October 2009, the Cat Logistics facility in Desford, England, has not sent any waste to a landfill, meeting the company's zero-waste goal 10 years early. Cat Logistics also keeps division-wide metrics for sustainable development in greenhouse gas emissions, water usage, recycling, and employee engagement.

Green warehouse operations | Cat Logistics

CEVA Logistics

In 2008, CEVA adopted a company-wide sustainability program to reduce the environmental impact of its business activities, particularly carbon emissions. The program encompasses measuring and reducing customers' carbon footprints; measuring and reducing the carbon footprint in warehouse activities via lean logistics and Kaizen activities; improving CEVA vehicles' fuel efficiency; and using a "green checklist" when procuring certain types of products.

C.H. Robinson Worldwide

C.H. Robinson views sustainability as a way to add value, improve efficiencies, and invest in the long-term success of shippers, contract carriers, growers, employees, and communities. The 3PL offers services that optimize business processes to efficiently use transportation and distribution network resources, ultimately driving out costs and minimizing carbon emissions. The company's produce-sourcing programs help reduce the distance from farm to table. Working directly with growers and retail customers helps allocate natural resources wisely and builds efficient farm-to-shelf distribution models. And its work with Cascade Sierra Solutions helps motor carriers reduce fuel consumption and carbon emissions.

DB Schenker

DB Schenker has launched Eco Solutions, a comprehensive range of climate-friendly transportation and logistics services. Eco Plus offers CO_2-free rail freight throughout Germany; Eco OceanLane enables shippers to reduce ocean freight CO_2 emissions by up to 50 percent; and the Eco Charter airfreight solution can reduce CO_2 emissions on select routes by up to 20 percent. DB Schenker also offers Eco Warehouse, a solution for building and operating energy-efficient and sustainable warehouses, and Eco Neutral, which lets shippers offset their CO_2 emissions by financing climate protection projects.

CO_2-free rail freight | DB Schenker

DSC Logistics

DSC is committed to adopting green practices throughout the company and to helping shippers achieve their sustainability initiatives. Since a coordinated company-wide program was launched in 2009, DSC Logistics has continued to improve and implement initiatives at all locations in its network. These initiatives augment the energy-saving and waste-reduction programs that the 3PL implemented on a location-by-location basis over the past several years.

EA Logistics

Delivered GrEAn, EA Logistics' sustainability program, includes measuring carbon emissions incurred in the freight it transports, and free offsetting of those emissions. EA Logistics uses biodiesel fuel in the company fleet; has installed T-5 energy-efficient lighting in its warehouses; complies with all anti-idle regulations at its warehouse and in its trucks; monitors its fleet to provide routing efficiency; trains drivers on efficient driving; and acts as a greener freight advocate in the industries it serves.

The Evans Network of Companies

In 2008, the Evans Network of Companies began focusing on reducing emissions by working with the EPA and non-government organizations to secure grants and other support for upgrading port drayage independent contractor trucks with emission-reduction technology. A new program called Export Coordination/Optimization-Match, or ECO-Match, aims to cut emissions and shipping costs by matching import and export loads to reduce the number of trucks needed for container pickup and delivery.

T-5 energy-efficient lighting | EA Logistics

Hydrogen fueling station | GENCO ATC

GENCO ATC

GENCO ATC partnered with customer Kimberly-Clark Corporation, Plug Power Inc., Air Products, and the Aiken-Edgefield Development Partnership to launch the nation's first multi-use industrial park fueling station in Graniteville, S.C. The fueling station supplies hydrogen directly to Kimberly-Clark's 450,000-square-foot distribution facility, managed by GENCO ATC, to be used with fuel cells powering Toyota forklifts. Using hydrogen fuel cells instead of lead-acid batteries can reduce greenhouse gases by more than 90 percent, according to customer consumption estimates.

Hellmann Worldwide Logistics

Living sustainably is part of Hellmann Worldwide Logistics' corporate DNA. The global 3PL supports environmental sustainability by using eco-friendly trucks worldwide, partnering with SmartWay drayage companies, recycling and reducing waste of all relevant materials, switching to energy-saving electricity, and eliminating ammonia in its refrigerated warehouses.

Hub Group

As an intermodal service provider, Hub Group is inherently green. For shipments moving more than 1,000 miles, intermodal transport cuts fuel use and greenhouse gas emissions by 65 percent compared to truck transport alone. Railroads are three times more fuel-efficient than trucks, and can move one ton of freight nearly 500 miles per gallon of fuel. Intermodal also helps reduce road congestion – one double-stack train equals 280 trucks.

Inmar

Inmar's reverse logistics services help shippers further their sustainability goals in a number of ways. For example, its re-marketing services kept more than 181 million pounds of material out of landfills in 2010. And through its donation program, two million boxes of food product that would have gone to waste were instead used to create six million meals for the needy in 2010. Supply chain services, such as packaging studies, have helped shippers reduce product packaging, while ensuring that new, more environmentally friendly packaging does not increase product damage, which ultimately results in waste.

Eco-friendly truck | Hellmann Worldwide Logistics

J.B. Hunt

Intermodal transportation is the highlight of J.B. Hunt's green service offerings – converting traditional truckloads to intermodal can reduce carbon emissions by 50 percent while lowering overall transportation costs. By utilizing double-stacked containers, J.B. Hunt increases fuel efficiency and decreases greenhouse gas emissions. Additional offerings include the Green Fleet dedicated contract solution, which involves working with customers to equip and manage a truck fleet that leverages emission-reduction opportunities. J.B. Hunt has also developed the Hunt Carbon Diet – a five-step carbon reduction program designed to improve energy efficiency, reduce carbon consumption and emissions, and lower transportation costs. J.B. Hunt has twice received the EPA SmartWay Carrier Excellence Award.

Double-stacked containers | J.B. Hunt

Kenco Logistic Services

Kenco views sustainability as a critical initiative, both inside the organization and on behalf of customers. The 3PL recently hired a full-time sustainability leader to oversee and drive green initiatives. In April 2011, Kenco established Web-based resource usage reporting via the EPA's Portfolio Manager for tracking select sites' carbon and water footprints. Kenco is currently developing a corporate sustainability assessment, site/facility audit, and sustainability best practices tutorial. In addition, the company has been incrementally upgrading its fleet with all-electric auxiliary power units to reduce idle time and fuel consumption.

Lynden

Lynden was the first transportation company in Alaska to gain SmartWay certification, and earned the state's GreenStar Award. Under its environmental policy, Lynden will meet or exceed environmental laws and regulations; maintain continual improvement in environmental performance; consider the long-term and overall environmental impact of its choices; strike the optimum balance between the environment and the long-term viability of its business; prevent pollution and protect the land, air, and water by maximizing efficiency, operating safely and responsibly, striving for cleaner processes, and guarding against accidents and avoidable pollution; and establish, monitor, and periodically review environmental objectives and targets.

NFI

The 3PL took steps to reduce its carbon footprint by implementing the NFI Fit Fleet of vehicles. Features of the fleet include super single tires, speed governors, and the use of biofuel and synthetic oil. NFI is also outfitting its facilities with the latest in energy-efficient technologies; and its Cherry Hill, N.J., headquarters operates solely on solar power. A recycling program is in place at all 54 nationwide facilities, and NFI has appointed a senior executive team member to lead sustainability efforts.

Penske Logistics

Improving miles-per-gallon performance and reducing truck fleet emissions are the core ingredients of Penske Logistics' green strategy. The third-party logistics provider also helps shippers analyze and reduce their own carbon footprints through optimized routes to save fuel, efficient trailer loading, and green lighting and recycling program advice. Penske Logistics is an active participant in the EPA's SmartWay Transport Partnership and has earned the program's highest rating of 1.25 as both a carrier partner for the company's own logistics truck fleet, and as a logistics and shipper partner.

Performance Team

Performance Team operates more than 60 Kenworth clean diesel tractors in its fleet, and initiated a no-idling policy at all locations around the country. All new forklifts purchased for its warehouse facilities meet California .06 carbon requirements for using less propane, creating fewer emissions, and requiring fewer oil changes and maintenance than older models. The 3PL also moved to low-energy T-5 fluorescent lighting in all facilities, installed motion detectors, and created blackout periods for long weekends and extended down times. Performance Team is a member of the Coalition for Responsible Transportation.

Natural-gas vehicles | Ryder

Ryder

In April 2010, the San Bernardino Associated Governments (SANBAG) Board selected Ryder as its fleet partner in a ground-breaking heavy-duty natural gas truck rental and leasing project. As part of the project, which aims to improve air quality in southern California, 202 heavy-duty natural gas-powered trucks will be deployed into Ryder's southern California operations network. Based on estimates, the project will: displace 1.51 million gallons of diesel fuel with 100-percent domestically produced low-carbon natural gas; use nearly three million gallons of domestically produced low carbon LNG; reduce 9.2 million pounds of greenhouse gas emissions and 131 tons of nitrogen oxide annually; and completely eliminate 2.65 tons of diesel particulate matter emissions from local neighborhoods.

TransGroup Worldwide Logistics

TransGroup offers TransNeutral, an opt-in program that calculates shipment-specific carbon footprints and enables users to offset the CO_2 emissions that result from their shipments. For every ton of CO_2 a TransNeutral shipment puts out, another ton can be taken away or prevented. In addition, TransGroup's end-of-product lifecycle recovery and disposition services enable technology and other asset-laden shippers to recover and properly recycle and/or dispose of equipment that has reached the end of its lifecycle.

Emissions-reducing truck | Werner

Transplace

Transplace's focus on placing freight with SmartWay Partner carriers has allowed it to achieve an industry-leading reduction in greenhouse gases and significant diesel fuel savings. In 2010, Transplace cut deadhead miles for private fleet carriers through a program that identified trucks that would typically run empty back to an origin. This program was able to reduce 1.6 million miles, representing 2,392 loads. In addition, Transplace's load consolidation efforts removed 5,055 trucks from the road and approximately 3.4 million miles driven by trucks.

Werner Enterprises

Werner Enterprises is committed to investing in technologies, strategies, and policies that increase fuel efficiency and decrease its carbon footprint. Through numerous sustainability initiatives and capital investments of more than $100 million in emissions-reducing technologies, Werner reports great strides in improving miles-per-gallon (mpg) and reducing emissions. Due strictly to mpg improvements from these fuel-savings initiatives, Werner purchased 2.6 million fewer gallons of diesel fuel in 2010 compared to 2009, which equates to a reduction of more than 20,000 tons of carbon dioxide emissions. Since 2007, Werner has saved 33 million gallons of diesel fuel, and reduced carbon dioxide emissions by more than 350,000 tons.

Continental Air Cargo

As part of United Continental Holdings, Continental Air Cargo is committed to its parent company's Eco-Skies initiative, which focuses on reducing emissions and improving aircraft fuel efficiency. Fleet modernization represents the majority of the carrier's impact: Since 1997, Continental Air has reduced emissions by 35 percent, creating an estimated 1.3 million tons fewer emissions than if it had not modernized the fleet. Other environmental improvements relate to preventing noise pollution; safely handling and disposing of toxic substances; and maintaining safe and clean supplies of drinkable water.

Delta Cargo

Delta has increased aircraft fuel efficiency 35 percent since 2000 through improvements in technology, operating procedures, and maintenance. In 2007, it became the first U.S. airline to launch a carbon-offset program. Delta strives to conserve resources, support alternative fuels research, and engage employees and customers through initiatives such as carbon offsetting and recycling. As a member of the SkyTeam airline alliance, it adopted the organization's social responsibility standard, which includes implementing best available technologies in fleet renewal and the most efficient procedures and operations to reduce noise and air emissions, including greenhouse gases.

Fuel-efficient aircraft | Delta Cargo

Lufthansa

Lufthansa combines measures such as fleet renewal, engine cleaning, lighter materials, improved infrastructure on the ground and in the air, and, in particular, the use of bio-kerosene. In March 2011, Lufthansa Cargo held its second-annual Cargo Climate Care Conference in Frankfurt to develop innovative solutions for the long-term improvement of the logistics sector's climate balance. During the conference, the airline presented prizes totaling $23,000 to junior researchers, customers, and employees who had developed innovative ideas for more climate-friendly airfreight practices.

Improved ground infrastructure | Lufthansa

DHL

In place since 2008, DHL's group-wide GoGreen environmental protection program sets goals for minimizing the company's business impact on the environment. GoGreen measures range from network and capacity optimization, fleet modernization, and alternative vehicle tests to facility efficiency improvements and employee initiatives. By offering carbon reports, consulting services, intermodal transport, and carbon-neutral shipping services to mail, express, and logistics customers, DHL transported more than 1.7 billion carbon-neutral shipments in 2010.


GoGreen program | DHL

FedEx

FedEx applies an EarthSmart Solutions designation, introduced in 2010, to any of its assets that meet its environmental sustainability and innovation standards, and achieve tangible results above standard industry practices. The first FedEx assets to earn the EarthSmart Solutions designation were its fleet of hybrid-electric delivery vehicles – the industry's largest – and its all-electric Modec trucks. Expanding its scope beyond vehicles, the company announced in January 2011 that any new U.S. facilities must be LEED-certified, and soon after secured Gold certification for its new Las Vegas facility and Memphis world headquarters.

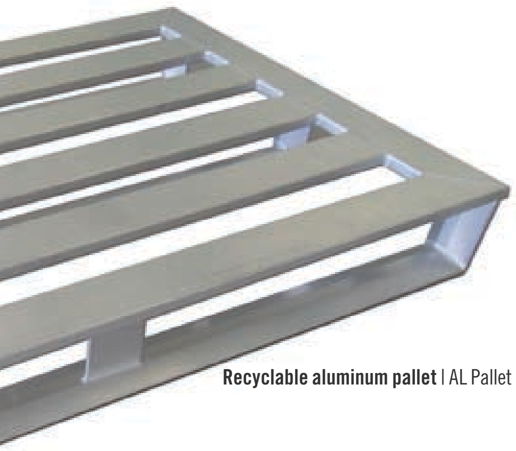
All-electric vehicle | FedEx

UPS

Because UPS operations depend on vehicles to a considerable extent, the company focuses on making its transportation networks as efficient and environmentally sound as possible. It applies this approach to its facilities as well, particularly with regard to conservation and recycling programs. Continually evaluating both available and emerging technologies, and seeking opportunities for using them, allows UPS to improve environmental performance. In March 2011, UPS charged its first Chief Sustainability Officer, Scott Wicker, with overseeing the company's sustainable business practices; introducing innovative, environmentally responsible products; and encouraging employee engagement in the communities where they live and work.

CHEP

Shippers using CHEP's pallet pooling system in lieu of limited-use white wood pallets are achieving measurable gains reducing their environmental footprint. For example, based on third-party lifecycle inventory analysis findings, Eclipse Berry Farms has reduced solid waste generation by more than 33,000 pounds annually, decreasing greenhouse gas emissions by about 25,000 pounds, and saving enough energy to power 20 homes with electricity.



Recyclable aluminum pallet | AL Pallet

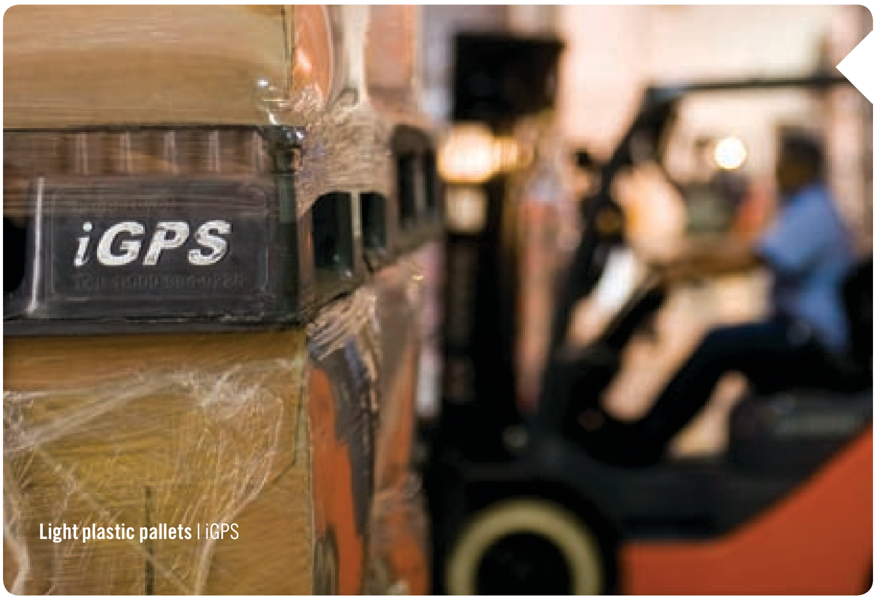
Pallet pooling | CHEP

AL Pallet

Weighing nine pounds, AL Pallet's recyclable aluminum airfreight pallet is among the lightest on the market, which creates a considerable shipment weight differential compared to wood and plastic alternatives. Shippers can load more cargo on a pallet and therefore achieve cost and emissions reductions by better utilizing assets and space.

Hyster

A two-pronged approach supports Hyster's environmental responsibility efforts: first, improving efficiency and reducing waste in its operations; and, second, developing and producing lift trucks that improve efficiency and reduce energy consumption. One of the largest-volume North American producers of zero-emission electric lift trucks, Hyster was among the first to adopt energy-efficient AC motor and control technology in its counterbalanced lift trucks. It also introduced internal combustion engine-powered lift trucks that are among the lowest-emission trucks available, according to testing by the EPA.



Light plastic pallets | iGPS

iGPS

iGPS's value proposition is built around helping shippers maximize freight with better load optimization. Its plastic pallets are 35 percent lighter than typical multi-use wood pallets, and therefore require less fuel for transport. With less fuel consumption, plastic pallets reduce pollution and greenhouse gas emissions. And, because pallets are 100-percent recyclable, if a unit breaks it can be molded into a new one, extending its lifecycle.

Kalmar

Launched in 2008, Kalmar's ProFuture program ranks its products against five ecological decision-making drivers: power source, energy efficiency, emissions, noise pollution, and recyclability. Within each category, the product is evaluated on a scale of one to five; the highest totals offer the most environmentally friendly benefits. Kalmar has awarded the ProFuture designation to products such as its E-One RTG Zero Emission crane, hybrid straddle carrier, automatic stacking crane, ship-to-shore crane with regenerative energy source, and battery-driven forklift truck.

Landoll

Landoll's Bendi i4's internal combustion engine (ICE) runs on LP gas, a lower-emissions fuel alternative, and its rear-mounted fuel tank is easy to refill or remove and replace, reducing the risk of spills. The ICE is rated at 67 horsepower at 2400 rpm, and meets or exceeds emission standards for its vehicle class in all 50 states. Landoll also offers the eco-friendly, battery-powered Bendi Electric narrow-aisle lift trucks, available with 3,000- to 4,500-pound lift capacities, and three-stage tilting masts with lift heights up to 36 feet.

The Raymond Corporation

In addition to producing energy-efficient electrical lift trucks, Raymond is investigating and developing alternative energies such as hydrogen fuel cell technology. Because they can be refueled in just a few minutes and eliminate the need for battery changes, hydrogen fuel cells offer higher productivity. The voltage delivered by a fuel cell remains constant until the fuel runs out – until then, the vehicle experiences no performance degradation. And hydrogen is environmentally clean: the only by-products from a fuel cell are water and heat.

Low-emissions lift truck | Toyota

Toyota Industrial Equipment Manufacturing (TIEM)

TIEM's environmental and safety improvements include transitioning its Columbus, Ind., manufacturing plant to a zero-landfill facility in 2004, which has kept 2,600 tons of materials out of the landfill, and reducing the facility's energy usage in 2008 to prevent 3,911 tons of CO_2 emissions. The company also promotes sustainability in its product line: Toyota 8-Series lift trucks feature an exclusive emissions system that not only surpasses current EPA standards, but also meets California's stringent emission regulations.

Battery-powered lift truck | Raymond

Yale

A number of green innovations are at work in Yale's lift trucks. An electronically controlled transmission significantly reduces tire and brake wear for internal combustion engine lift trucks, which meet or exceed California Air Resources Board emissions requirements. Its zero-emission electric-powered lift trucks feature a system that recaptures energy during braking and load lowering; the energy is reused, reducing the truck's overall energy consumption. And through alternative power initiatives, such as hydrogen fuel cell technology, more efficient batteries, and clean diesel fuels, Yale supports eco-friendly product design.

Cold-ironing | APL

APL

APL invests and participates in a number of programs that help reduce the company's environmental footprint, including slow steaming, cold-ironing (shore power), and use of emulsified and biodiesel fuel, as well as innovative technologies such as ballast water treatment. To strengthen its pledge to reduce emissions, APL began its voluntary fuel-switching program in Los Angeles and Seattle in 2007; it has since extended the program to Vancouver, Hong Kong, New York, and New Jersey. In April 2011, APL became the first shipping line to switch its vessels to cleaner-burning low-sulfur fuel at the Port of Singapore. The move is expected to curb sulfur oxides emissions from ships by almost 90 percent.

CMA CGM

Since 2005, CMA CGM has reduced CO_2 emissions from its owned and chartered fleet by 35 percent. Among its strategies for achieving these results was equipping its new vessels with the latest environmental technologies, such as electronically controlled engines, improved hydrodynamics, and waste recycling. As a result, these vessels discharge less than two ounces of CO_2 per mile per TEU. Another of CMA CGM's innovative solutions is equipping its fleet with 130,000 eco-containers, which feature bamboo flooring, low-energy reefers (reducing energy consumption by up to three times), and light steel containers, made of a highly resistant and much lighter steel.

Evergreen

To reduce the environmental effects of collision or grounding, Evergreen launched its double-skin hulled Greenships vessels, which position fuel tanks in transverse bulkhead spaces to minimize risk of oil spill or fire. The carrier also adopted strategies for reducing CO_2 emissions, including reducing vessel speed, monitoring fuel consumption and operating conditions to ensure main engine propulsion, maximizing vessels' total cargo load, and measuring cargo operations productivity and efficiency to minimize the time vessels spend at port.

Horizon Lines

Through its Horizon Green initiative, Horizon Lines addresses marine environment protection, emissions, sustainability, and carbon offsets. Each focus area involves a spectrum of programs, ranging from shipboard waste and ballast water management to personnel training for environmental incident response. To help shippers get involved in its green efforts, Horizon introduced the AeroGreen carbon offset solution, which calculates the amount of CO_2 emitted by each shipment and gives shippers the option to offset the emissions by purchasing Verified Emission Reduction credits.

Greenships vessel | Evergreen

Climate Box school program | Maersk Line

Maersk Line

Maersk Line has focused its environmental efforts on improving vessel energy efficiency to reduce carbon footprint, reducing air emissions in port areas through fuel switching and technologies, and reducing impact on water and the marine environment through technology and operating practices. The carrier has cut emissions by 20 percent per container moved since 2002, and aims for a further reduction of 25 percent in its CO_2 emissions per TEU per kilometer from 2007 to 2020.

MOL

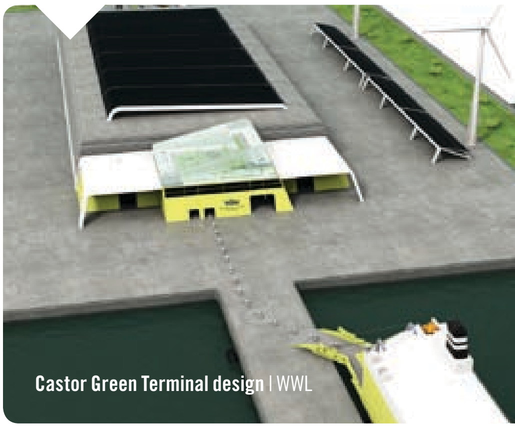
MOL received its ISO 14001 international certification for environmental management in 2003, after expanding the scope of its Environmental Management System from onshore operations to all vessels in the fleet. MOL's primary actions to prevent air pollution are focused on reducing exhaust gases, a factor in global warming and acid rain, and replacing freon and chlorofluorocarbons in its cold-chain equipment with substitute refrigerants. Its next step is developing an eco-friendly car carrier that will reduce its CO_2 emissions by 50 percent.

NYK Line

NYK Line divides its sustainability efforts among its vessel operations, air and land transportation, port facilities, and offices. In one of its air and marine pollution prevention projects, *NYK Atlas* became the first vessel in the NYK fleet to receive full shoreside power in November 2007 at Yusen Terminals, Port of Los Angeles. The carrier then began an initiative to install shoreside electric power units to enable its entire containership fleet to use alternative power while berthing. Other initiatives include promoting effective fuel utilization, installing double hulls on tankers to prevent fuel links and spills, and installing devices to increase combustion efficiency.

Wallenius Wilhelmsen (WWL)

WWL seeks to improve its environmental performance by reducing emissions from its ocean fleet through strategies such as operating with low-sulfur fuel at sea, and using fuel with less sulfur content for auxiliary engines at berth. As of 2010, WWL has also equipped six vessels with ballast water treatment systems, ahead of pending regulations. The carrier continues to look ahead with the design for its facility of the future: the Castor Green Terminal. Targeted for 2020, the facility integrates terminal, processing, and distribution activities into one site, enabling optimized supply chains while eliminating CO_2 and other harmful emissions from terminal and processing activities.


Castor Green Terminal design | WWL


Biodiesel tank | Port Wilmington, N.C.

North Carolina Ports

The NC State Ports Authority initiated its Project Energyteam in 2007 to focus on energy efficiency and cleaner, greener operations. The program's multiple areas of concentration include electricity, utilities, fuel usage, emissions, alternative energies, recycling, hybrid technologies, and communications. The program has demonstrated multiple successes, including installing four electric container cranes; using ultra low sulfur diesel fuel; reducing electricity consumption by approximately 80 percent in multiple warehouse facilities; and reducing emissions through equipment modifications and hybrid technologies.

Port of Tacoma

In October 2010, the Port of Tacoma and Totem Ocean Trailer Express (TOTE) flipped the switch on the Pacific Northwest's first cargo ship fueled by shore power. Sparked by a $1.5-million EPA grant, two TOTE cargo ships now plug into electrical power and shut down diesel engines while docked during weekly calls at their Tacoma terminal. The $2.7-million shore power project will reduce diesel and greenhouse gas emissions by up to 90 percent during TOTE's 100 ship calls each year in Tacoma.


Industrial rain garden project | Port Tacoma

Port of Long Beach and Port of Los Angeles

Reaffirming their commitment to slashing air pollution, the ports of Long Beach and Los Angeles approved a new version of the San Pedro Bay Ports Clean Air Action Plan (CAAP). The 2010 CAAP update builds upon the successes of the original, which, since being enacted in 2006, has initiated a range of air pollution-reducing measures for the ships, trains, trucks, and other heavy machinery used to move approximately $300 billion worth of freight through the port complex each year. Through successful collaboration and substantial investments by the two ports and the industries they serve, air emissions related to port-facilitated goods movement have declined 33 percent to 56 percent since 2005.

Solar rooftop project | Port of Los Angeles

South Carolina Ports Authority, Port of Charleston

The South Carolina State Ports Authority (SPA) Pledge for Growth initiative continues to bring together various environmental and community programs across land, air, and water at facilities throughout the state. As an example, the SPA is contributing $3 million to restore 22 acres of tidal marsh along the southern tip of Drum Island near the Port of Charleston, and is evaluating the use of cleaner fuels such as biodiesel and ultra-low sulfur diesel.

BNSF

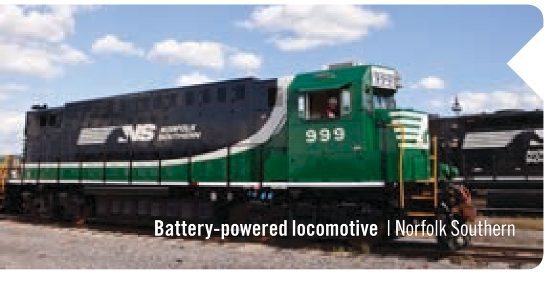
In 2010, BNSF customers reduced emissions by more than 23 million tons of CO_2, which is equivalent to reducing the consumption and resultant emissions of more than two billion gallons of diesel fuel. For the third year in a row, the rail carrier provided its intermodal, automotive, industrial products, and agricultural products customers with customized letters analyzing their total rail carbon footprint and savings compared to movements of those shipments via the highway.

CN

CN's most recent sustainability report highlights efforts that the railroad is making to cut emissions; increase energy efficiency; reduce, reuse, and recycle waste; and encourage environmental stewardship. Specifically, CN is increasing locomotive fuel efficiency through fleet renewal and technological applications, reducing energy consumption and waste at facilities, and exploring alternative energy sources. The railroad is also extending modal shift protocols to new jurisdictions – protocols that allow shippers to get credit for switching shipments to environmentally friendly modes of transportation, such as rail.

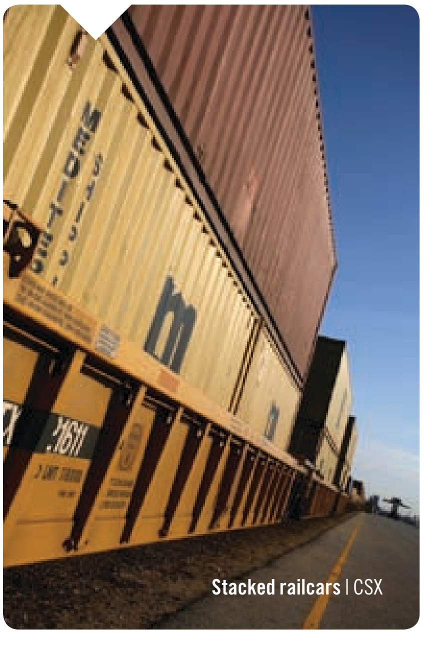
CSX

CSX's commitment to continual improvement has allowed the company to boost its fuel efficiency through new technology and conservation efforts. CSX has invested $2 billion over the past decade to improve its locomotive fuel efficiency and reduce greenhouse gases. These investments comprise locomotive idling reduction technology and real-time energy management technology that uses GPS, track grade, and curvature data. The railroad is also spearheading the National Gateway Project, a freight transportation link between the Mid-Atlantic ports and the Midwest, which is expected to have a major impact on reducing CO_2 emissions and fuel consumption.


Battery-powered locomotive | Norfolk Southern

Norfolk Southern

Norfolk Southern has put in place four green priorities for 2011. Chief among them is working toward its five-year goal of reducing emissions 10 percent per revenue ton-mile by 2014 compared with 2009 emissions. Other priorities include improving energy efficiency in company-owned facilities, encouraging employee recycling and other programs that support the company's sustainability performance, and engaging communities looking for ways to have a positive impact in the areas of conservation, volunteerism, and civic leadership.


Stacked railcars | CSX

Union Pacific

Union Pacific's *2010 Sustainability and Citizenship Report* highlights a fuel consumption rate reduction goal of one percent annually from 2011 to 2015, as measured on a gross-ton mile basis. Attaining this goal represents a 23-percent fuel-efficiency improvement since 2000. The railroad also reduced its greenhouse gas emissions rate from locomotives by three percent on a gross-ton mile basis compared to 2009. Union Pacific improved fuel efficiency by three percent, saving more than 27 million gallons of diesel fuel compared to 2009.


UMAX container train | Union Pacific

Solar power installation | A. Duie Pyle

A. Duie Pyle

The carrier's most recent commitment to environmental sustainability, a megawatt solar installation for its 570,000-square-foot warehousing and distribution facility in Parkesburg, Pa., supplies 100 percent of its electricity needs. Other environmental measures in motion include fuel-efficient equipment and engine idling controls, recycling and waste reduction of motor oil and tires, energy-efficient lighting, and organizational changes that range from the use of sustainable cleaning products to printing and copying practices that default to two-sided printing.

ABF

As part of its environmental awareness campaign, ABF initiated several programs including: reducing fuel consumption and enhancing operational efficiency through best practices that include a strictly followed equipment maintenance/replacement program and a limited maximum speed limit of 62 mph; engine idle shutdown programming to prevent unattended idling in yard tractors as well as road and city tractors; and fairing extensions on new equipment to close the air gap between the tractor and trailer, thus improving aerodynamics.

Bison Transport

Bison Transport continues to reduce the amount of carbon dioxide and nitrogen oxide in its operations by improving environmental performance. Many of the carrier's 1,050-tractor fleet and 3,000 trailers are equipped with fuel-efficient tires, transmissions, and engines; trailer side fairings; auxiliary power units to reduce idling; and in-cab computers to monitor fuel economy. Additionally, Bison is an industry leader in the use of long combination vehicles, which have been shown to reduce greenhouse gas emissions by 40 percent.

Challenger

As a measure to improve fuel economy and efficiency, Challenger has invested in a fleet of 600 long combination vehicle (LCV)-equipped trailers. Consisting of two connected 53-foot trailers, LCVs are pulled by a single power unit, thereby doubling the capacity of the load while consuming only 70 percent of the fuel of two separate units. Incorporating super-single tires and wind skirts to maximize fuel consumption further enhances trailer efficiency.

Celadon

The carrier has made considerable investments to reduce carbon emissions and fuel consumption in its fleet. Among these changes, Celadon installed auxiliary air heaters on all trucks to eliminate the engine's need to idle in cold weather; equipped trucks and trailers with the most fuel-efficient dual tires available on the market; accelerated new truck purchases; and reduced the weight of 2,149 trucks in its fleet by converting them to aluminum wheels.

Fuel-efficient truck | Celadon

Con-way Freight

Con-way Freight has developed a Web-based linehaul simulation tool, which it uses to analyze and optimize its freight transportation network. The information helps the trucker reduce transit times and create a more efficient overall network. Annual benefits include: cutting overall daily operating miles by 124,000 (16.6 million); conserving 2.6 million gallons of diesel fuel; reducing 58.6 million pounds in carbon emissions; and reducing particulate emissions by 32 tons.

C.R. England

C.R. England is testing new technologies to limit deadhead and empty miles, and increase optimization. The carrier is also looking at new equipment to reduce weight, increase aerodynamics, and increase fuel efficiency on both tractors and reefer trailers. Additionally, C.R. England has invested in 53-foot refrigerated intermodal containers that feature lightweight day cabs.

Knight Transportation

Annually, Knight Transportation has eliminated more than 900 million pounds of CO_2, four million pounds of nitrous oxide, and 100,000 pounds of particulate matter emissions. On the road, the carrier is currently in the process of outfitting its entire 9,000-trailer fleet with SmartWay-certified aerodynamic trailer blades, which will reduce fuel consumption by more than six percent and substantially improve the carrier's carbon footprint. Off the road, Knight has implemented numerous environmentally friendly initiatives at its facilities, including the installation of a 200,000-watt solar panel system and a cold-water loop air conditioning system, providing clean and efficient energy at its Phoenix headquarters.

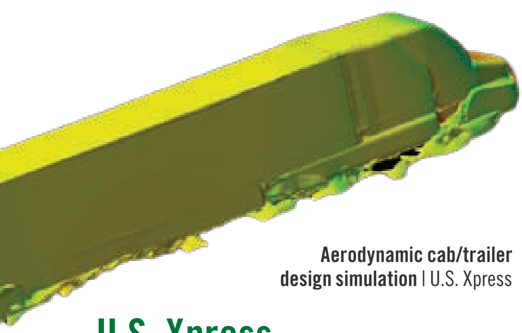
Environmentally friendly truck | Knight Transportation

53-foot refrigerated intermodal container | C.R. England

Speed-restricted truck | Schneider National

Old Dominion

Old Dominion has implemented a number of green measures in all of its 31 fleet shops located in the lower 48 states. These include: drive-through truck washers with custom-built oil-water separators that allow wash water to be recycled; building shops with "tilt-wall" construction that require less maintenance; energy-efficient lighting and HVAC units; roofing material that is solar reflective index 80; and licensed companies that pick up waste oil, filters, and antifreeze for recycling.



Aerodynamic cab/trailer design simulation | U.S. Xpress

U.S. Xpress

With truck orders of more than 3,100 new units placed this year, U.S. Xpress will operate one of the most fuel-efficient and environmentally friendly fleets in North America. This latest upgrade, representing a capital investment of more than $200 million, ensures that 100 percent of the U.S. Xpress over-the-road fleet features 2007 or newer EPA-compliant engines. Other green initiatives include fuel-efficient tires, aerodynamic mud flaps, an engine controller-based fuel incentive program, speed limit policies, and GPS technology to improve routing and conserve fuel.

Schneider National

Schneider National has in place a comprehensive approach to improving fuel efficiency, reducing greenhouse gas emissions, and upgrading the energy efficiency of its facilities. Its green initiatives include voluntarily operating the fleet at 60 mph (since 2008); using renewable fuels in trucks (more than one million gallons of blended biodiesel used each year); and equipping trucks to include the most energy-efficient and aerodynamic features available, such as trailer skirting, wheel covers, and tire inflation monitoring systems.

Swift Transportation

Swift Transportation's commitment to sustainability is underscored by its Clean Fleet initiative. Utilizing more than 1,000 2009 tractors, its fleet is fully exempt from port dirty truck fees, reducing carbon emissions as well as shipping costs. In addition, Swift is California idle compliant and uses all EPA-certified 2007 or newer trucks and trailers.

Low-emissions hybrid truck | YRC

YRC Worldwide

YRC Worldwide has recently engaged three sustainability initiatives as a means of being more efficient and economical. First, the company is shifting to 5W full-synthetic motor oil, which will improve the fuel efficiency of its fleet and reduce motor oil waste. YRC also is adding wind skirts to its 53-foot trailers, which will reduce drag to improve fuel economy. Finally, network engineers are exploring better ways to optimize its network and minimize empty miles while maximizing trailer capacity. Network design will work in tandem with fleet enhancements, driving further emissions reductions.

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After years of uncertainty, chemical shippers and service providers are getting back on the right road.

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Smart Strategies For Uncertain Times

Chemical shippers – and the transportation and logistics providers that serve them – have been on a wild ride during the past few years.

The 2009 recession sparked precipitous drops in shipment volumes. Then, when the economy began to pick up in 2010, volume surged again, wreaking havoc on capacity availability. So far in 2011, the state of the market seems to be a state of confusion. This one-two punch of volatility and uncertainty has created some interesting business challenges.

"The industry just experienced a few very unusual years," says Glenn Riggs, senior vice president, North American logistics for Odyssey Logistics, a Danbury, Conn.-based asset-neutral multimodal chemical logistics provider.

"2009 was an incredibly bad year, and the volumes for chemicals fell off," he explains. "In 2010, volumes came back out of nowhere – it may have just been inventory rebalancing – but trucking to support the skyrocketing demand wasn't there. The industry quickly faced a capacity issue and pricing soared."

"At the height of the recession, companies were managing inventory very closely out of fear. None of our chemical shippers were able to give us a forecast; they had no clue what demand was going to be," recalls Ed Hildebrandt, senior vice president of operations for ChemLogix, a leading provider of chemical industry transportation management services and technology headquartered in Blue Bell, Pa.

Today, Riggs notes, chemical transportation companies are not sure what approach to take. Should they keep hiring drivers and adding assets to their fleets to keep up with current demand? Or should they be cautious in case the economy tanks once more, dragging chemical shipments downhill yet again?

"Companies are hedging and behaving cautiously," Riggs says. "The industry is trying to find itself, determine what the future looks like, and set its priorities."

Some chemical service providers are taking a glass-half-full approach.

"In late 2009, volumes returned to pre-recession levels," says Jeff O'Connor, president and CEO of Morris, Ill.-based A&R Logistics

Chemical tank car load volumes dropped off during the economic downturn of the past few years, but have recently bounced back strong.

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Inc., which comprises three operating entities: A&R Transport, A&R Packaging & Distribution, and A&R Global Logistics. The company is the country's leading service provider within the dry bulk resin plastic industry.

Chemical producers are opening new U.S. plants, and total chemical production is up compared with 2010 – both positive economic signs.

"A&R Logistics was in the fortunate position at that time to acquire more tractors and trailers so we could support our customers' needs and meet their increased demand for capacity," he says. "The market continued recovering through late 2010, then started to level out to pre-recession volumes, but has continued to stay strong. I see that as a positive economic sign.

"Also, chemical producers are beginning to open new plants within the United States – something that would not have happened two years ago," O'Connor says.

Dow Chemical Company, for example, recently announced that it will build new factories in Texas and on the Gulf Coast to increase ethylene and propylene production. The facilities are expected to open in 2015 and 2017, respectively.

The most recent numbers from the American Chemistry Council (ACC) also show reason for cautious optimism. Output of chemical products within the $674-billion domestic chemical industry rose strongly during April 2011 (the most recent month for which numbers are available). Gains were made in production of plastic resins, synthetic rubber, man-made fibers, industrial gases, pharmaceuticals, consumer products, and adhesives and other specialties. Compared to April 2010, total chemical production in all U.S. regions was up 2.1 percent, the ACC notes.

If chemical producers return to business as usual, the chemical logistics industry can do the same. But a number of issues and challenges still have the industry on edge.

The Capacity Challenge

Securing over-the-road transportation capacity, for example, is a major concern for chemical companies. During the recession, many trucking companies serving the chemicals industry shed trucks and

After establishing itself as a leading provider in the bulk plastic transportation market, A&R Logistics has expanded to serve shippers of dry, flowable, and liquid commodities – including chemicals – domestically and internationally.


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drivers to flex with the decreased demand and reduce operating costs, and they have not yet replenished those assets. Carriers may be hesitant to add trucks and drivers because of economic uncertainty, and others who want to ramp up may not have access to the capital to do so. The result? A tightening of capacity that has increased transportation costs and shifted the balance of power.

"During the recession, shippers put a lot of pricing pressure on carriers, but the dynamics of the market have changed," says O'Connor.

effects of the Federal Motor Carrier Safety Administration's (FMCSA) Comprehensive Safety Analysis (CSA) 2010, a program that alters how the federal government rates carriers and drivers on safety. While drivers' safety records were previously wiped clean whenever they began a new job, under CSA, those records travel with the drivers – and can impact the safety ratings of the carriers they work for.

"CSA 2010 extends safety compliance and accountability to the driver level, which is important," says O'Connor. "This is a great program,

ChemLogix's exclusive BulkTainer service provides door-to-door, safe, multimodal bulk liquid transportation to every market in North America.

"Shippers recognize this and are working with carriers to ensure capacity going forward.

"From pricing consideration and minimum volume commitments to increased operational flexibility, shippers are taking proactive steps to ensure they are a customer of choice," he explains.

Federal regulations may further aggravate the capacity crunch. In particular, many shippers and carriers are concerned about the

but it's a real game-changer for our industry.

"Previously, if drivers were terminated because of safety violations, they could easily get a job with another trucking company that same day. Now, with CSA 2010 and the new level of visibility, drivers with poor safety records will have a hard time getting hired."

That could mean a driver shortage – experts estimate CSA 2010

(continues on page 82)

The Chemical Supply Chain: Putting Safety First

Safety is serious business for the chemicals industry. Because of the nature of its products, the industry needs to be more vigilant than most industries in making sure goods are not spilled or tampered with during transit. Over the past decade, various legislations, actions, and initiatives have helped to improve the industry's safety and security practices. But chemical producers, carriers, and logistics companies are not letting up when it comes to putting safety first.

"Safety and security standards are tightened year after year in the chemical industry," says Glenn Riggs, senior vice president, North American logistics for Odyssey Logistics, a Danbury, Conn.-based multimodal chemical logistics provider. But Riggs feels there is still a gap between government and industry when it comes to communicating about security threats.

"If Homeland Security, the FBI, or the Transportation Security Administration see a threat, that information is not usually relayed to the trucking companies. There isn't a great deal of communication," he says.

Odyssey has been working to rectify that. In April 2011, the company held its annual industry conference with chemical transportation carriers and adopted safety as the meeting's theme, inviting Intelligent Transportation Society of America and Homeland Security officials to attend.

Security threats and safety standards are of increasing concern to chemical shippers and service providers.

Chemical shippers have to "position themselves to have the right systems and processes in place to stay ahead of the curve on new security procedures," Riggs notes. "Also, when selecting logistics and transportation providers, chemical companies must screen safety records and only select the best of the market."

Chemical shippers may also consider using alternate transport modes and routes because of safety concerns, says George Nahas, vice president of sales and marketing for CG Railway, which provides a rail-ferry service that transports railcars for chemical producers shipping goods between Mobile, Ala., and Coatzacoalcos, Mexico. This alternative to the traditional cross-border land route to Mexico provides a safety benefit as shippers' products are "secure on an ocean vessel, instead of rolling through metro areas, for a large portion of the supply chain route," Nahas explains.

The advent of the Federal Motor Carrier Safety Administration's (FMCSA) Comprehensive Safety Analysis (CSA) 2010 program has pushed the safety stakes higher for transportation providers serving the chemicals industry. CSA 2010 is a major federal safety compliance and enforcement initiative aimed at reducing commercial truck crashes, injuries, and fatalities. It increases motor freight carriers' accountability and responsibility through greater measurement, intervention, safety evaluation, and information technology.

"Shippers have always measured carriers based on safety levels, but now, with CSA 2010, they have a level of real-time visibility to carrier safety information that they've never had before. As soon as shippers see a change in one of their carrier's safety measurements, they immediately ask for an explanation," says Jeff O'Connor, president and CEO of Morris, Ill.-based A&R Logistics Inc., whose division, A&R Transport, won the 2010 National Tank Truck Carriers' Competitive Safety Contest.

"Safety is of paramount importance to us and to our chemical shippers," O'Connor adds. A&R utilizes a methodical process of hiring and training truck drivers to ensure maximum safety. The company also takes time to engage drivers in its culture of safety, bringing them into the A&R corporate offices during the initial training process to have lunch with senior executives and learn about the company's commitment to safety.

"Drivers need to understand that safety comes first for us – for our clients and for our employees. We want them to know they need to keep themselves safe and communicate any unsafe conditions they see when making pick-ups or deliveries so we can address it with our shippers," O'Connor explains.

A&R has also been proactive about installing electronic onboard recorders in all its vehicles. (An FMCSA-proposed rule that would require electronic on-board recorders for all interstate commercial truck and bus companies is currently pending.) The devices track the number of hours a driver has been on duty, serving as an electronic version of drivers' traditional paper logs.

"The technology offers some great safety benefits and protection for our drivers," O'Connor says. "These devices ultimately reduce their risk and ours.

"Attention to safety isn't just something shippers and the government demand from our industry," he adds. "It's fundamentally the right thing to do."


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(continued from page 78)
could eliminate up to eight percent of the driver workforce – which would increase the tightening of capacity.

"At a time when we need more capacity – and the critical path to capacity is hiring more drivers – carriers will be wary of hiring any driver who will hurt safety ratings," Riggs explains. "Also, some drivers who don't want to be measured under these new rules are leaving the industry. So while CSA 2010 is being implemented in the name of safety, it is causing some capacity hedging."

In addition, updates to the FMCSA's Hours-of-Service (HOS) regulations – which limit when and how long commercial motor vehicle drivers may drive – are giving pause to some chemical transportation providers.

"The new proposal, which will be finalized in July 2011, would require commercial truck drivers to complete all driving within a 14-hour workday, and to complete all on-duty work-related activities within 13 hours to allow for at least a one-hour break. It also leaves open for comment whether drivers should be limited to 10 or 11 hours of daily driving time, although FMCSA currently favors a 10-hour limit," according to an FMCSA press release.

"The fear that these new HOS limits will take some drive time away is causing the market to hedge in case it will cause a capacity problem," says Riggs.

Bulk transport carriers are still not sure what effect the FMCSA's Hours-of-Service rules and the CSA 2010 safety program will have on operations and capacity.

Working Through Rising Costs: Mode Selection

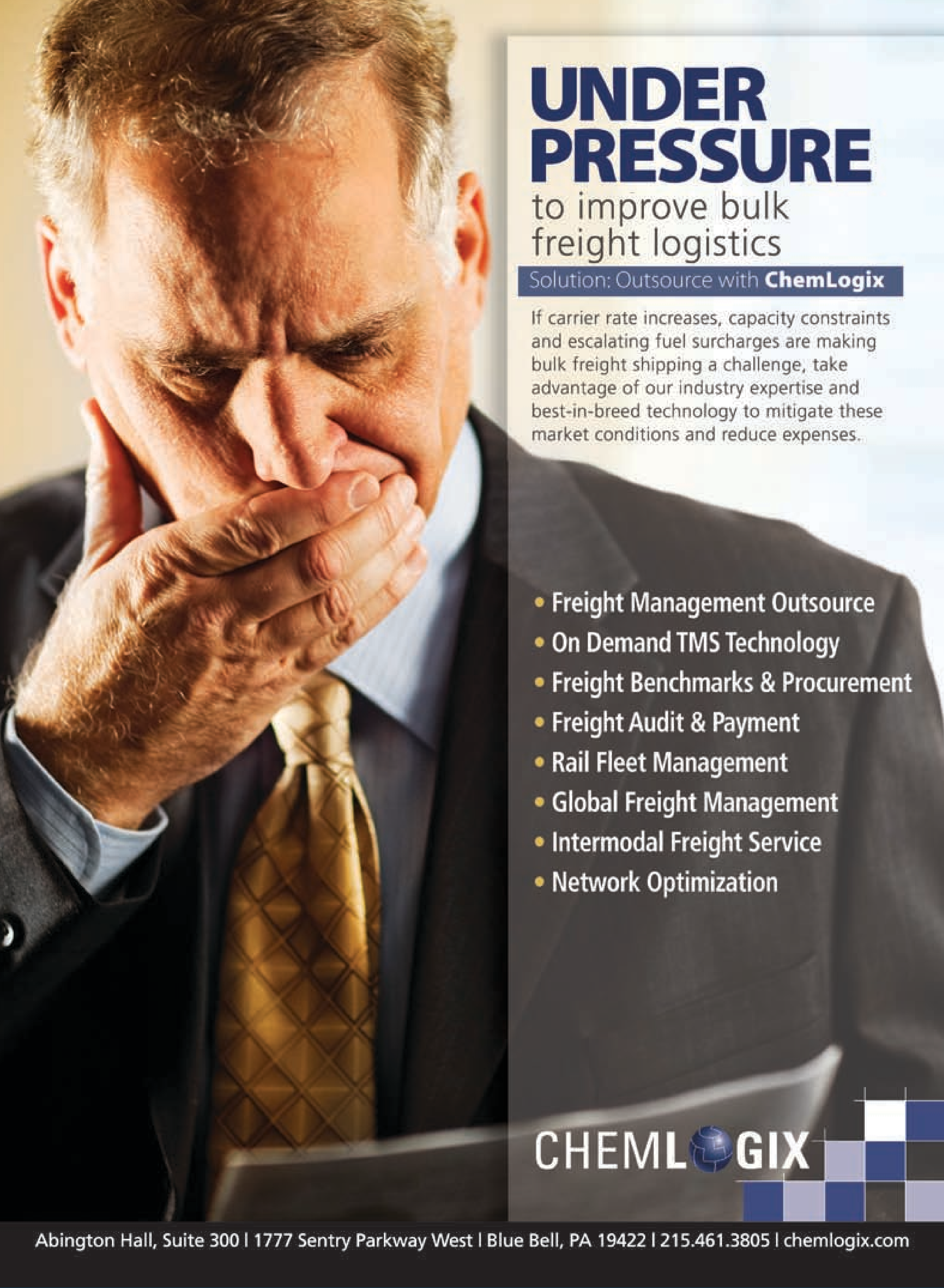
This lack of capacity has meant an increase in transportation rates – a concern for chemical shippers who are also dealing with the consequences of surging oil prices.

"Right now, chemical shippers are reeling from the double whammy of increased carrier costs driven by a lack of capacity, and the huge increase in fuel surcharges," says ChemLogix's Hildebrandt. "They are scrambling to reduce their costs."

For many chemical providers, reducing costs may mean switching to different modes of transportation. With crude oil prices hovering at the $100-per-barrel mark, intermodal and rail transportation have been gaining favor among chemical shippers.

"Our intermodal business has grown 50 percent in the past 24 months," says Hildebrandt. "As oil prices go up, companies look at alternate means of shipping to reduce costs. Using intermodal, shippers can get their freight covered at a lower cost."

Rail and ocean options are also helping chemical shippers reduce costs. CG Railway, for example, offers a cost-effective alternate transportation mode for chemical producers shipping goods to and from Mexico. The shortline railroad, a subsidiary of International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Shipholding Corporation, provides a rail-ferry service that transports railcars to and from Mobile, Ala., and the chemical industry-heavy port city of Coatzacoalcos in Mexico.

The service provides cost-effective solutions in several ways. "Our route is 900 miles by sea, as opposed to more than 1,400 miles from the eastern United States to southern Mexico via the traditional Mexican-U.S. border crossings," says George Nahas, vice president of sales and marketing for CG Railway. "Also, the frequency and consistency of our service allows companies to better manage inventory levels and reduce costs."

In addition, the quick turnaround time CG Railway's service provides allows customers to reduce the amount of leased equipment they need to expend capital on.

"The quicker we can turn our customers' private equipment around, the fewer railcars they require to support a particular business," Nahas says. "Also, while the railcars are on our vessels, they are stationary, so there is less wear and tear on the equipment."

Working Through Rising Costs: Technology

For other chemical shippers, technology is the key to reducing transportation and logistics costs. Transportation management systems (TMS), in particular, can provide chemical companies the visibility they need to manage logistics with an eye toward efficiency and cost-effectiveness.

"A TMS provides the granular detail that helps chemical shippers make decisions on how to manage the supply chain in the face of rising costs," says Hildebrandt of ChemLogix.

For its chemical customers seeking a TMS, ChemLogix offers an IBM solution that easily integrates with SAP, the ERP of choice for many chemical shippers. The company also offers network design using the IBM *iLog* toolset. For ChemLogix, using a trusted partner such as IBM, whose

Business is Tanking – And That's a Good Thing

If Bob Schilli has his way, more chemical shippers will utilize piston tanks to transport and store their highly viscous bulk cargo. "Our goal is to raise the profile of the piston tank. We have an opportunity to grow this business, and we're going to work very hard at achieving that objective," says Schilli, president of Schilli Corporation, the St. Louis, Mo.-based parent company of its subsidiary, Piston Tank Corporation.

Piston Tank Corporation controls a fleet of more than 70 piston tank trailers in North America and 24 piston tanks serving customers in Europe and Asia. The company's stainless steel tank trailers are equipped with its patented piston technology that transports and completely discharges viscous materials, such as grease, silicone, ink, and putty, as well as food products such as peanut paste and chocolate.

In contrast with traditional methods of transporting viscous commodities – in small containers such as cans, drums, or barrels – a piston tank allows for safe, easy, and rapid unloading. Traditional tank and hopper trailers can take up to eight hours to unload, while piston tanks – using the combination of an air-driven piston and a pump to unload – generally get the job done in two hours.

"Using piston tank trailers eliminates the need for small containers, which means they do not have to be stored. More importantly, it means it is not necessary to manually empty and clean the containers before disposing of them," Schilli explains, noting that the company's piston technology can also be used in tote bins and in storage tanks within plants.

Through its subsidiary, Schilli Corporation leases these piston tanks to shippers, who can also opt to use Schilli's tank truck carrier subsidiary for transportation. "Leasing gives us the best means of serving customers, and the best opportunity to grow the piston tank business," Schilli says.

Provided exclusively through Piston Tank Corporation, a Schilli Corporation company, piston tank trailers can reduce costs, eliminate waste, and provide quick delivery of highly viscous products such as petroleum, grease, ink, and silicone.

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Odyssey Logistics & Technology | 39 Old Ridgebury Road | Danbury, CT 06810 | (866) 487-7481 experience crosses many industry verticals, made more sense than developing a chemical-focused specialized application in-house.

"The capability already existed in IBM's solution, and it easily translates to chemical companies," Hildebrandt says.

In many cases, chemical companies lag behind industries such as consumer product goods in terms of technology adoption. So for Hildebrandt, who says his firm often "drags chemical customers into the use of technology," a solution like the one ChemLogix offers, which is utilized by other industries, is already ahead of the game.

"If our TMS were designed purely for the chemical industry, it would need to play catch-up with other solutions," he explains. "Instead, we brainstorm with IBM on how and where other verticals are using technology. Then we plan with our chemical companies so we can give them a vision of where they should be down the road."

Some chemical shippers, however, favor a proprietary, specialized system such as the one offered by Odyssey Logistics. The company's supply chain software package, *Odyssey Global Logistics Platform*, provides global visibility into chemical shippers' supply chain activities, and supports all transport modes and shipping scenarios typically employed by global chemical or process manufacturers.

"Our state-of-the-art systems offer deep capability in key modes such as tank truck, and can help properly manage hazmat transportation to help ensure compliance and safe transport," Riggs explains.

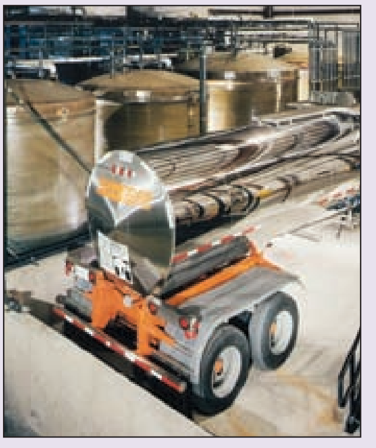
"We continually make significant investments in our technology, focusing on the logistics needs of chemical and process manufacturers," he adds, noting that the solution helps chemical producers manage everything from cargo planning to tendering, shipment visibility and

3PL Partnership Boosts Flexibility, Cuts Costs

The past few years have made chemical shippers painfully aware of the market's unpredictability. Given demand fluctuations, many chemical companies have sought ways to better manage overhead costs such as warehousing and distribution – arriving at flexible, volume-based solutions.

That's where WSI comes in. The national third-party logistics provider has helped a number of chemical companies consolidate their storage and labor needs, reduce costs, and boost operating flexibility.

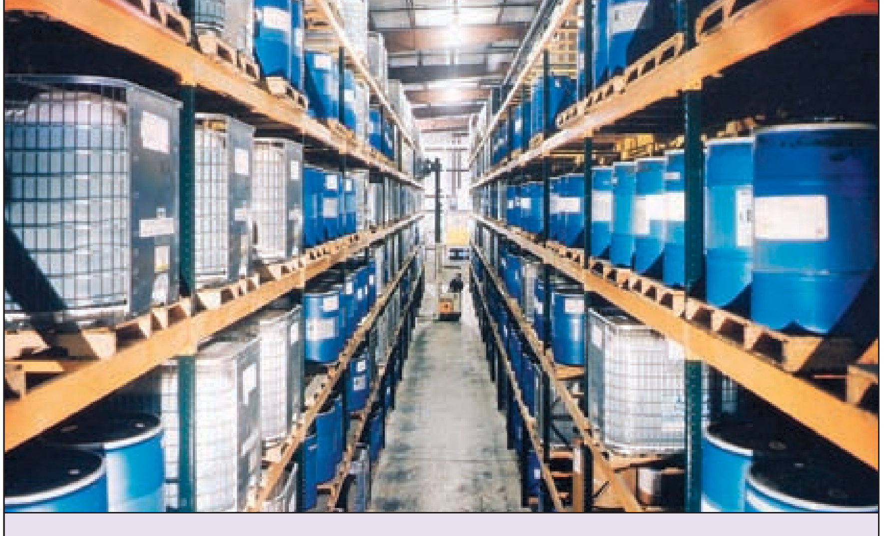
For example, one of the world's leading producers of polymers and high-performance plastics has, in recent years, spun off several business units and reconfigured its supply chain. The company found it no longer had the volumes to support its large West Coast distribution center, and turned to WSI for help. WSI assumed operation of the facility, giving the customer much-needed flexibility in storage volume and handling capacity.



"The facility was a fixed cost. We took over the operations and made it a variable cost," explains WSI spokesperson Rob Kriewaldt. "We helped the customer dramatically reduce costs, while utilizing excess capacity in the facility for other customers and expanding our offerings to include import/export services due to the facility's strategic location."

Similarly, when the customer wanted to downsize its East Coast distribution operations, it closed a New York City area facility and moved into a WSI location in Allentown, Pa. "They wanted flexible space and labor costs," Kriewaldt says. "We've given them the ability to grow and shrink their space as needed, as opposed to having a fixed cost every month.

"The chemical industry is cyclical," he adds. "Our services allow chemical shippers to tailor their costs to the ups and downs of their business cycle."



WSI operates more than 14 million square feet of public, contract, and dedicated warehousing space, offering diverse logistics solutions for a wide range of products, including chemicals.

configurable event management, freight audit and payment, and management reporting. Odyssey's system also offers seamless integration, with a single interface to all carriers and other key parties in a chemical producer's supply chain, such as carrier portals and U.S. Customs and Border Protection. These aspects have helped Odyssey meet customers' increasing demand for supply chain visibility.

The industry has lagged a bit when it comes to communicating electronically up and down the supply chain, but chemical shippers are starting to realize the benefits of automation and visibility.

"The marketplace is beginning to demand services such as real-time freight tracking and tracing," says Riggs. "In the past year, we've seen a huge emphasis from our client base." The data is critical for chemical shippers looking to analyze and quantify factors such as the on-time performance of their carriers, he adds.

More than ever, chemical shippers rely on 3PLs to help steer them through everyday challenges such as rising costs and new technology implementations.

Some challenges remain in achieving those capabilities, however. "Some carriers serving the chemical industry do not have the infrastructure necessary to provide this type of electronic information and communication," Riggs explains. "Bulk and heavy freight carriers have varying degrees of sophistication in their networks, and to have true visibility throughout an entire shipping network, all carriers involved will need those capabilities."

3PLs to the Rescue

All the issues and challenges swirling around the chemical industry have put the need for knowledgeable logistics partners at a premium. Chemical shippers depend on their third-party logistics providers (3PLs) – perhaps more now than ever – to help steer them through the uncertainty, rising costs, and technological challenges they face while conducting business every day.

"With the downturn of 2009 and subsequent recovery underway, many companies are looking to their 3PLs for the technology, resources, expertise, and capacity to efficiently manage the increased flow of goods and material within their

As oil prices continue to rise, many chemical providers and shippers are turning to alternate transportation methods, such as rail and intermodal, to help reduce costs.

supply chains," notes O'Connor of A&R Logistics.

Thus, even in uncertain economic times, 3PLs serving the chemicals sector are seeing an uptick in the number of companies that are outsourcing supply chain management. "We've seen significant growth in that area for a variety of reasons," says Hildebrandt, who reports that ChemLogix has experienced compound annual growth of 30 percent in the past five years.

"First, companies are looking to vary their costs," he explains. "They are taking fixed costs, such as running a logistics department, and outsourcing them. This makes them variable costs, because volume fluctuations affect how much they pay the service provider.

"Another big draw for outsourcing to a 3PL right now is the fact that chemical shippers are having difficulty getting their freight covered," he adds. "So they come to 3PLs for assistance. We have more leverage with carriers than a single shipper does; and we have the market knowledge to determine which carriers have capacity, and in which lanes."

Third-party logistics providers can also help chemical shippers examine their supply chains and find opportunities for cost savings that may be overlooked. One example is reducing expedited shipping costs. With the inventory issues that chemical producers recently experienced, many have reverted to overusing expedited shipping to deliver orders on-time for their customers, Hildebrandt reports.

"We help clients whose expedited shipments have increased exponentially work backward from the shipment timeframe and engage in better planning," he explains. "We advise them to consolidate more – converting LTL into truckload, for example – and to use other transportation modes such as intermodal to better manage costs and inventory flow."

But while the tough climate of today's chemical market has created good opportunities for chemical logistics providers, it hasn't been smooth sailing.

"We have never had to provide this level of flexibility to drive value for clients," Hildebrandt says, noting that ChemLogix's wide range of services has helped it be flexible in delivering what chemical shippers need as the market fluxes and changes.

Odyssey's Riggs concurs. "We've had to speed up our processes to stay in tune with daily and weekly chemical market trends," he says. "We've learned to be agile and fast in adjusting our supply chain to stay ahead of trends and protect our customer base." CL

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THE RAIL/AG CONNECTION:

AN AMERICAN REVIVAL

As U.S. growers and railroads embark on a new era of relevance, they are encountering new opportunities working together — and old grievances working apart.

by Joseph O'Reilly

Once upon a time, railroading and farming shared privileged company among the likes of Old Glory, baseball, and apple pie. Both were mainstays of life–artifacts of Americana–well before globalization and the "auto-nation" phenomenon radically changed the U.S. transportation and industrial landscape.

In the latter half of the 19th century, the U.S. railroad surfaced as a bridge linking rural farming communities with emerging urban centers. Accessible and expedient transportation created new domestic markets for local growers to sell in, especially as people migrated toward cities. Each supported the other and together they fed a growing population.

By the turn of the century, the railroad was figurative for U.S. industrialization. If the robber baron culture was impetuous and, at times, overly capitalistic, agriculture provided a balance weight. Farming remained the heart and soul of America, a reminder of its independence, self-subsistence, and work ethic.

Agriculture and railroading flourished as a pair. But they turned fallow together as well. For the better part of the 20th century, freight railroads were out-moded by trucks and small farms begat large agribusinesses that were increasingly marginalized by global competition.

Recently, however, both industries have experienced a revival of sorts. Domestic agriculture has been buoyed by a combination of forces: the growth of consuming countries around the world; greater concern over food safety; and a cultural foodie movement that is bringing fresh, locally grown food back into vogue. The railroad is also back in the ascendancy as transportation costs, capacity, and sustainability considerations increase the value of rail/intermodal solutions.

As U.S. growers and railroads embark on a new era of relevance, they are encountering new opportunities working together–and old grievances working apart.

"You can't move a 1,000-acre farm 500 miles south. Nor can you move railroad tracks," says Amy Homan, director of carload marketing for Iowa Northern, a shortline railroad based in Cedar Rapids, Iowa.

It's a simple reality that speaks volumes. As growers and railroads explore new ways to expand their respective businesses and enhance products and services, they do so within basic constraints. Agriculture is held captive by climate and land, while Class I railroads and shortlines are confined to point-to-point transport networks. Given their shared restrictions, a mutual dependency has naturally coalesced over time.

"Our nation's railroads are essential to the profitability of the soybean industry, and the soybean industry is essential to the profitability of railroads."

– **Dean Campbell,** a farmer from Coulterville, Ill., and chairman of the Soy Transportation Coalition

RAILROAD-TIED BY SHARED CONSTRAINTS

For Monsanto, the St. Louis-based multinational agricultural biotechnology corporation, the railroad is an extension of its business.

"Rail has been an important part of our transportation plan for many years," says Mark Baxa, global trade and compliance lead for Monsanto. "We use rail to accommodate intermodal ocean container movements to coastal ports as part of our U.S. export process for seed and crop protection products."

More than 80 percent of Monsanto's U.S. inland-containerized shipments to ocean ports are ferried by rail.

Dig a little deeper into U.S. grain commodities and the significance of rail transport becomes even more apparent. For example, the Soy Transportation Coalition's 2010 annual study highlights the importance of the railroad system to soybean growers and soy product users. Among its findings:

- The largest Class I railroads transport 24 percent of the soybeans, 43 percent of the soybean meal, 67 percent of the soybean oil, and 99 percent of the biodiesel produced in the United States.
- Among the largest Class I railroads, revenue from transporting soybeans and soy products dropped two percent from the previous year–from $1.5 billion in 2008 to $1.47 billion in 2009. From 2006 to 2009, Class I railroad revenue increased from $1.1 billion to $1.47 billion.

"Our nation's railroads are essential to the profitability of the soybean industry, and the soybean industry is essential to the profitability of railroads," explains Dean Campbell, a farmer from Coulterville, Ill., and chairman of the Soy Transportation Coalition.

"Farmers acknowledge that railroads need to generate necessary revenues to maintain and enhance their infrastructure," Campbell says. "Yet if rail transportation becomes too costly, farmer profitability and agricultural exports will be diminished."

The rail/agriculture connection is not just about soybeans. Other grain exports continue to increase as developing countries grow. Farm products follow coal and chemicals as the third-largest commodity type moved by the railroads, accounting for 8.2 percent of tonnage and 9.2 percent of revenue, according to The Association of American Railroads.

If there is one salient fact illuminated by this data, it's that growers and railroads are benefiting from a boon in the agriculture industry. Expanding markets in Asia and other parts of the world are spiking export demand for U.S.-grown products. Interest in renewable energy sources–ethanol and other biofuels–has similarly granted agri-businesses a new economic lifeline and revenue stream.

But while railroads have interests in other industries–energy, construction, and intermodal, as examples–growers and agriculture users in rural areas are largely reliant on the rails to move product efficiently and economically. Absent railroad competition, pricing traction has become a contentious issue between shippers and carriers. And as both industries see new opportunities to grow, tension is building.

CONGRESS ON THE RAILS

In 2009, Senator Jay Rockefeller (D-W.Va.) introduced the Surface Transportation Board Reauthorization Act to the perked interest of all rail service providers and users. The terms of the legislation allow for the Surface Transportation Board (STB) to become an independent authority sanctioned to mediate disputes between railroads and shippers, as well as monitor operational performance on the tracks. It's a play to re-regulate the railroad industry, awakening echoes of President Grover Cleveland's Interstate Commerce Commission Act of 1877, a first attempt at reining in robber barons.

The proposed bill has drawn ire from railroads and praise from captive rail users. Carriers see government intervention as a step back in time that will negatively impact further investment in U.S. transportation infrastructure. Shippers, on the other hand, welcome oversight from the government to ensure their best interests are protected from arbitrary price increases.

With regards to railroad regulation, the Soy Transportation Coalition's contention is this: Between 2008 and 2009, rail revenues on a per-ton basis dropped five percent for soybeans. From 2007 to 2008 (the most recent data available), rail rates on a per-ton basis increased 16.7 percent for soybeans. More telling, 41 percent of rail movements of soybeans (9.89 million tons) are transported at rates the STB would classify as potentially excessive – resulting in a possible overcharge of $110 million in 2008.

"The potential $110-million overcharge by the railroads underscores the need for agricultural shippers to have a more accessible rate resolution process," says Mike Steenhoek, executive director of the Soy Transportation Coalition.

The coalition, which comprises the United Soybean Board, the American Soybean Association, and nine state soybean boards, was established in 2007 to promote a cost-effective, reliable, and competitive transportation system that serves the agriculture industry.

"While many rail rates are justified, some are not," Steenhoek says. "As a result, a significant amount of money is not being retained in farmers' wallets or in rural communities due to unreasonable rates.

"Creating an environment that encourages continued infrastructure investment by the rail industry, yet allows disaffected shippers to efficiently seek rate relief, is possible and should be the goal of everyone concerned with the future of U.S. agriculture," he adds.

Steenhoek believes the new configuration of Congress following the 2010 elections will help the cause, and place pressure on railroads to be more transparent with regards to pricing negotiations.

Railroads, for their part, have collectively voiced opposition to such oversight, while individually maintaining a lower profile on the issue. While it remains a fluid situation, most carriers are focusing on purposeful investments in services, equipment, and infrastructure as a means of deflecting any criticism.

If there is room for compromise between rail carriers and shippers, there are countless reasons why it should happen. U.S. railroads and agribusinesses share more things in common than not. As commodity producers and bulk volume transporters, their businesses fall in line like railroad ties on a long straightaway.

RAILROADING ON THE UP AND UP

One unique challenge both industries face today is the failing state of transportation infrastructure, especially in rural parts of the United States.

The Iowa Northern shortline railroad maintains close ties to both growers and processors, providing an efficient and cost-effective method for moving goods to market.

"Rural infrastructure receives scant attention. Unfortunately, we have a system of rural roads and bridges that is not equipped to handle the volume of production," says Steenhoek. "Agriculture is a 21st-century industry relying on 1930s rural infrastructure.

"There is a stark contrast between the technology employed to produce and harvest agricultural products and much of the infrastructure responsible for delivering it to consumers," he adds. "More is being asked of our rural infrastructure, while the revenue to support it has reached a plateau or is retreating."

This failure also breeds unease for

smaller growers that do not have the sophistication or resources to coordinate transportation and logistics solutions. It's an imbalance that compels farmers to rely on bigger operations and cooperatives.

"The complexity of transportation poses a unique challenge for growers," says Homan. "Most are realizing that the agribusiness typically can piece together the transportation puzzle more efficiently than they can as individual growers, giving them more time to concentrate on developing their core business."

FINDING COMMON GROUND

As a consequence of these shortcomings, shippers have had to rely on transportation and logistics partners–railroads, shortlines, trucks, and inland river barges–to fill in the gaps. This is where collaboration among shippers and carriers has moved past the current pricing impasse, a hopeful sign that both sides will eventually find common ground.

"Historically, in rural areas, the railroad was the main connection point," says Paul Hammes, vice president and general manager of agricultural products for Union Pacific.

"The agriculture industry started out as a collective of many smaller growers. Over time, these operations consolidated and became more concentrated in terms of farming specialization," he says. "The railroads adapted to this change. For example, Union Pacific started running larger trains to processing facilities. We began using 110-car grain shuttles to go point to point and meet demand."

One obstacle railroads face transporting grains in a heavily skewed export market is that it's a one-way move; with an imbalance of freight moving inbound and outbound. This creates problems in terms of positioning railcars and containers.

Union Pacific recently launched a plant-to-port transportation and transload service offering agricultural product transfers from covered hopper unit trains directly to containers at its Yermo, Calif., facility. The service includes double-stacked intermodal trains serving the ports of Los Angeles and Long Beach. Union Pacific provides door-to-door supply chain logistics services–including real-time product tracking, direct ocean carrier contact, and transload management–to help shippers manage a single freight movement through the carrier with one point of contact.

> "Shortlines engineer their services to match customer need – not the other way around."
>
> **Amy Homan,** director of carload marketing for Iowa Northern

"The service is a response to increasing agriculture export demand. Shippers need access to more containers. So we're moving product to where equipment is," says Hammes.

From a historical perspective, this attention to detail is not foreign to the railroad industry. In 1980, before the Staggers Act deregulated the industry, more than 40 Class I railroads were operating. Today there are seven. Contraction created greater economies of scale at the expense of denigrating service–a criticism the railroads have endured for 30 years.

While railroad consolidation has created a monopoly of primary U.S. and Canadian east and west coast carriers that overlap in the Midwest, a wealth of functioning shortlines still cater to the demands of farmers and agriculture users.

Iowa Northern Railroad, for example, maintains close ties to both growers and processors, providing an efficient and cost-effective method for moving goods to market. Agribusiness makes up a large portion of the railroad business in general, but it's the backbone of Iowa Northern's operation.

"Shortlines engineer their services to match customer need–not the other way around," says Homan. "This becomes invaluable to growers and co-ops during harvest time, when the goal is to get crops out of the field and in the market as quickly as possible, allowing farmers to concentrate on their land."

Compared to Class I railroads, shortlines are more adaptable and can cater to specific customer needs. Often they are the first and last mile in a captive rail shipper's supply chain, so flexibility and attentiveness to detail is critical.

One example of Iowa Northern's flexibility is its capacity to serve one grain elevator twice in a single day so that a shipper can keep loading cars and maintain clear space at the production point. Class I's can provide that service as well, but it doesn't always fit into their operational or financial models.

FIELDS OF OPPORTUNITY

Pricing and regulatory issues notwithstanding, U.S. railroads and agribusinesses are primed for a new period of growth as both industries see opportunities to expand and strengthen positions in their respective markets.

The agriculture sector is the beneficiary of promising new export markets where demand for U.S.-grown crops continues to build.

For example, in 2010, U.S. soybean exports as a percent of production was forecast at 48 percent. In 2006, it was 35 percent. China remains the top export market for soybean product, sourcing 826 million bushels in 2010, followed by Mexico (120 million bushels), and the European Union (100 million bushels). Growers see similar positive forecasts for other grain types such as corn and wheat.

On the rail side, prospects are equally positive. What carriers lack in convenience they more than make up for in energy efficiency and cost. And with capacity issues an increasing concern for shippers across all industries, the growing efficacy of intermodal has railroads on track for greater success.

In the crop chain, intermodal transport touches every mode apart from air. Shipments are moving in bulk volumes from remote locations. From truck-to-rail transloading ramps to barge transfers at river ports, shippers rely on railroads to make these transitions as seamless as possible.

"Most agriculture products are heavy bulk, so shipping via railcar is much more economical than container. More services are being directed toward carload than container," explains Hammes. "As far as intermodal, we are working to cross-sell with the agriculture group to make that service product available to shippers."

Union Pacific's covered hopper unit trains carry agricultural products to its Yermo, Calif., facility for transloading.

Of late, railroads have been investing capital in spades, expanding track and port capacity to handle agriculture exports to Asia as well as intermodal import traffic. Apart from its transload facility in Yermo, Union Pacific is collaborating with BNSF on opening a new facility at the Port of Long Beach. BNSF also has plans for a transload facility in Amarillo that will cater to agriculture shipments.

These investments appear to be reaping some dividend among agriculture users. The Soy Transportation Coalition released its second-annual railroad report card in May 2011. Agricultural shippers were asked to rate carriers in three areas–on-time performance, customer service, and costs. Union Pacific received the highest rating, followed by BNSF, which topped the list in 2010. On average, respondents gave railroads a 10-percent higher score than in 2010.

One interesting footnote is that survey respondents report having an average of 1.4 options for rail service–including shortline and regional railroads–at individual shipping locations. Without competition for service, rail shippers by and large still remain captive in terms of alternatives.

For railroads, infrastructure expansion and service upgrades are means to help mollify shipper concerns over rate increases. As in other areas of the supply chain, if service providers can bundle more value into their product and provide an acceptable level of service, pricing becomes less of an issue.

Railroads are well aware of the cost vs. service dynamic, and increasingly recognize that helping agriculture customers is in their best interest. Everything they do to support export trade in terms of investing in infrastructure and facilities only expands their value to importers, especially from an intermodal perspective. Having balance in a transportation industry that is dependent on commodity cycles is important.

"This industry is very cyclical, with variations in production and sourcing locations on any given day. There is variability in terms of demand, as well as world climates," says Hammes. "We must be flexible and ultimately stick close to the customer." ■

WORKING SMARTER

Earning a graduate degree while employed can be challenging. But for those who make the effort, the rewards can include greater job satisfaction, the potential for promotion, and a salary uptick. Thinking about going back to school while holding on to your job? These professionals will inspire you.

By Tamara Chapman

WORKING SMARTER

As supply chain management grows in importance, jobs in the field will continue to be in demand. Yet, some industry analysts say the sector is experiencing a shortage of executives.

A surprising number of professionals working in supply chain management do not hold logistics-related degrees, according to Irvin Varkonyi, marketing manager and adjunct faculty member of the transportation and logistics programs at the American Public University (APU) System.

Varkonyi does not suggest that the supply chain sector lacks educated individuals. Logistics professionals might have undergraduate degrees in industrial design or management, or master's degrees in business administration or engineering. But the majority have not earned a degree in supply chain management or logistics.

That situation may change as supply chain professionals adapt to their changing roles. "Transportation and logistics has become a complicated sector," Varkonyi says.

That complexity requires a workforce and management team responsive to constant change, skilled in the latest technology, and well-versed in best practices. For their own benefit, savvy companies encourage employees to continue their education.

And savvy employees take advantage of the opportunities that come along. If they are seeking a new job or promotion, it's important to hone skills, acquire knowledge, and broaden perspective.

Fortunately for both businesses and individuals, colleges and universities are responding to market demands by offering a host of undergraduate, graduate, and certificate programs specializing in logistics and supply chain management. Many have created online or on-site degree programs that synchronize with a working professional's overloaded schedule. Still others have crafted programs that fill industry knowledge and skill gaps.

POSITIONED FOR SUCCESS

The University of San Diego developed its master of science degree in supply chain management (SCM) in response to private businesses looking for employees trained in strategic and big-picture thinking, as well as hands-on problem-solving and decision-making. The SCM degree program meshes online and face-to-face instruction with experiential learning in the workplace, according to Lauren Lukens, program director.

Because the experiential learning takes the form of an integrative project anchored in the student's workplace, program applicants must have jobs. And their employers must be willing to partner with them in the integrative project, which allows students to apply classroom and textbook learning to a real, rather than a hypothetical, workplace challenge. The end result benefits both the student, who gains experience that can enhance career prospects, and the employer, who benefits from new ideas and solutions.

To ensure that they position students for career success, many logistics and SCM programs maintain strong ties with industry to stay abreast of emerging challenges and deliver up-to-date knowledge.

For their own benefit, savvy companies encourage employees to continue their education—and savvy students take advantage of opportunities.

At APU, for example, an industry advisory board helps curriculum developers devise programs that anticipate workplace challenges. Businesses indicate demand for people who can move and manage information as well as products, and understand the challenges associated with reverse logistics and green issues. As a result, APU may develop concentrations tailored to these topics.

Industry input also allows educators to gauge whether the instruction they provide withstands real-life tests. "We do a periodic review session with industry experts, which allows us to benchmark our programs' effectiveness," Lukens says.

Demand for logistics and supply chain management programs will only increase as profit-minded businesses look to cut costs and boost revenues. "The supply chain is where the money is, and where the efficiencies are," she says.

And for the working professionals profiled on the following pages, the supply chain is also where opportunity resides. Read on to learn how they have enhanced their career prospects and aided their employers through advanced education.

TEAM PLAYER

Just a few years ago, as a hard-working college graduate employed by a major manufacturer and distributor of paper products and office supplies, Tim Engstrom was eager to climb the corporate ladder.

He had an undergraduate degree in transportation and distribution from Western Illinois University and experience as a transportation analyst. He wanted to help his employer enhance its supply chain infrastructure.

"I applied for some jobs internally, but always lost out to applicants with MBAs," he says. "I was frustrated."

So frustrated that he contacted a former professor who had begun teaching at Chicago's Elmhurst College, home to the city's only graduate program in supply chain management. At the professor's urging, Engstrom enrolled in the master's program.

Today, advanced degree in hand, he proudly serves as the program's success story. His image appears on advertisements in online publications such as *The Washington Monthly*, on Elmhurst's Web site, and in the college's marketing collateral.

In addition to bringing him some minor fame, the program also brought him the desired career results. Halfway through the 21-month, 22-course program, he began rising through the company ranks and moving into new areas, including supply chain strategy. In October 2010, he landed a new job at Lawson Products, where he now serves as senior director of operations, with responsibility for global transportation, Canadian operations, and the firm's Illinois packaging center.

Engstrom attributes this career triumph to his degree and the professional experience it made possible. "The SCM program really opened my eyes," he says, noting that it not only introduced him to "the whole supply chain gamut"–everything from purchasing and warehousing to forecasting and human resources issues–but also connected him with a community of professionals from different industries. They taught him almost as much as his textbooks and professors.

TIM ENGSTROM

Senior Director of Operations, Lawson Products

Undergraduate degree in transportation & distribution, Western Illinois University

Master's degree in supply chain management, Elmhurst College

WORKING SMARTER: Applied grad school reverse logistics studies to streamline Lawson's returns processing and refunds from 45 days to seven days.

Elmhurst enrolls students in cohorts, meaning that "the group you start with you end with," Engstrom explains. Initially, he thought he might tire of the same faces or miss out on the opportunity to meet new students with the advent of each new class.

But reality contradicted his expectations. "Being part of a cohort is like playing on a team," he explains. "Going through all these classes at such a fast pace is sometimes frustrating or tiring, but your classmates cheer you on."

What's more, because cohort members come from different industries and hold a range of positions, they offer varying perspectives. Engstrom's cohort included professionals from purchasing, freight brokering, warehousing, and sales, allowing him a glimpse of their challenges. Today, the cohort members keep in touch and continue to share insights.

Like many graduate programs in supply chain management, Elmhurst offers students the opportunity to complete a capstone project. For Engstrom, that project allowed him to collaborate with members of his cohort on an effort that yielded tangible savings for his employer.

At that time, the firm was hoping to expand market share by catering to home offices and small enterprises outside the central business districts–enterprises in suburban strip malls, for example. The effort was stymied by an unwieldy product return process.

Engstrom and his teammates applied their studies in reverse logistics to address the concerns. They learned that it typically took the firm 45 days to process returns and issue refunds. That timeframe may not have troubled larger corporate clients, but it was a dealbreaker for small and home-based businesses. Engstrom was able to streamline the process to a mere seven days.

"The practice is still in effect today," he says. By reducing costs and preserving client relationships, the strategy Engstrom developed noticeably affected the firm's bottom line.

OVERCOMING FEAR

In addition to boosting his knowledge base and expanding his professional network, Engstrom's return to the classroom enhanced his communication and presentation skills. He counts that accomplishment as key to his subsequent success.

"I used to be desperately afraid of public speaking," he recalls. "But at the end of the program, I did the entire 45-minute capstone presentation by myself."

He has also become comfortable interacting with managers, teammates, and external partners. Now that so many people rely on communicating via text messages and email, his ability to speak confidently and clearly makes Engstrom stand out in the workplace.

Thanks to Engstrom's education, his employer hears his message loud and clear.

LIVING THE DREAM

As a child, Kevin Ryan entertained two aspirations: He wanted to be a policeman and a pilot.

As an adult, he lived both dreams, serving as a police officer for a decade and as a pilot for the Army and Army Reserves. Along the way, he developed a new dream: to be part of a cutting-edge organization focused on best practices and innovation.

To realize his dream, Ryan enrolled in an online transportation and logistics master's program offered by the American Military University (AMU), a member of the American Public University System. He opted to enhance his studies with a concentration in security.

Throughout much of his time as an online student, Ryan was a reservist, serving tours of duty in Djibouti, northeast Africa; Iraq; and Afghanistan. At night, on weekends, and during any downtime that arose, he'd log on to his computer and, course by course, work his way toward earning a degree.

For Ryan, on the move and continents away from a brick-and-mortar institution, the AMU program offered an ideal path to additional education. It was also the credential he needed for career advancement.

In fact, he says, the degree helped him land his current position as a pilot for Atlas Air, an aircraft, crew, maintenance, and insurance freight operator headquartered in Purchase, N.Y. The company specializes in accommodating over-size, unusual, or sensitive cargo.

The firm's market position attracts plenty of high-qualified applicants. To

KEVIN RYAN

747-400 Pilot, Atlas Air

Member of the Army Reserves

Online transportation and logistics master's program, American Military University

WORKING SMARTER: Understanding how transportation fits into the supply chain, how international regulations and policies affect global trade, and how security issues play out around the world helps him be a better pilot for Atlas Air.

stand out in the pool, which includes any number of military pilots with extensive experience flying internationally, Ryan believed he needed expertise that extended well beyond the cockpit. He needed a better understanding of how the various transportation modes integrate into the supply chain, how international regulations and policies affect global trade, and how security issues play out around the world.

Ryan found AMU's online experience suited more than just his ever-changing locations. It also suited his preference for self-pacing and self-motivation. With an online program, he explains, "you have the freedom of having a classroom anywhere you have a computer and an Internet connection."

That freedom comes at a small price, but one Ryan found manageable: students don't have the opportunity to connect in person with professors or classmates. AMU compensates for that disadvantage with e-mail exchanges, thorough critiques of papers and projects, and a social media presence that connects the entire AMU community, including alumni. Professors also host online discussion boards, allowing students to learn from each other.

"Students are given weekly reading assignments that require posting a response, then critiquing the postings of others," Ryan explains. "Sometimes discussions get quite heated. The drawback is, you don't have face-to-face contact."

Without the chance to detect a smile or a furrowed brow, it can be difficult to interpret a particular posting. "You lose inflection and tone," Ryan says, but ultimately the content outweighs presentation.

Ryan credits the AMU program with deepening his understanding of how Lean Six Sigma practices benefit manufacturing, how various transportation options integrate to make a resilient supply chain, and how a street protest in Libya or Egypt might ultimately affect a factory floor in Europe.

As Ryan sees it, that understanding makes him a better team player at Atlas, in part because it allows him to support processes whose operational benefits might not be immediately evident. It also allows him to anticipate company or industry responses to emerging events.

On a recent flight over Japan, for example, he looked down on the devastation caused by the March 2011 earthquake and tsunami. It wasn't hard to predict the resulting disruption to the automotive supply chain. Nor was it difficult to foresee the logistics challenges that would confront first responders and officials charged with rebuilding cities and businesses.

Ryan also credits his graduate education with enhancing his ability to identify the best solutions to problems. Through case studies and examinations of best practices, he learned to approach problems by putting himself in the position of the affected players. That gave him a new relish for problem-solving.

Today, he says, "If there is a better way to do things, I like to do it."

ON-THE-JOB ROI

When Jose Munoz-Gonzalez first turned his talents toward supply chain management, it was because he wanted to work in an ever-changing area focused on constant improvement.

"Supply chain management attracted me because of the diverse opportunities it offers," Munoz-Gonzalez says.

To make the most of his options, Munoz-Gonzalez knew he had to improve his knowledge base, skill set, and understanding of how to motivate, manage, and communicate with employees, customers, and vendors. He needed to know, he recalls, "what a world-class operation would look like.

"I decided it was my responsibility to explore the possibilities and understand best practices," he says.

Armed with a bachelor's degree in industrial engineering and 19 years of experience in operations, factory and materials management, and quality control, the California-based Munoz-Gonzalez enrolled in the University of San Diego's master's program in supply chain management. To qualify for the program, which features an integrative experience based in the workplace, he needed the support of his employer, AMETEK Inc., a global manufacturer of electronic instruments and electromechanical devices.

The two-year program consists mostly of online courses, but each cohort gathers on campus for periodic residencies, where they get to know the faculty and cover topics best explored in the classroom, such as negotiation. Perhaps most important, the campus visits allow members of each cohort to connect with one another. These connections typically lead to relationships that last well beyond the program's end.

Online courses are supplemented by podcasts and video tutorials that allow working professionals to absorb information while multitasking. And because discussion boards operate asynchronously, students can post responses to a topic or question whenever their schedules permit.

For Munoz-Gonzalez, the program proved immediately beneficial as he began learning about new tools and new applications for familiar tools. He was introduced to different "hard" tools for supply segmentation; discovered how to manage cross-functional teams; and learned to analyze the cost implications of various decisions.

And in his leadership classes, he honed the soft skills that are difficult to learn without expert advice and mentoring, exploring questions such as when to direct instead of coach an employee, and how to decide whether to work with subordinates to improve their skills or assign them to a different role.

Much of his learning had immediate applications on the job. "I started getting return on investment after three to four months," he says.

His integrative project proved especially beneficial. Like other students in his cohort, Munoz-Gonzalez worked with his professors and employer to create a project that would complement his new learning while providing a tangible benefit to the company.

"The assignment involves defining a project that will deliver benefits to the company and allow the student to apply the tools and knowledge gained from the program," he explains. His project involved working with vendors to identify the value and cost of products supplied to AMETEK. The project also enlisted the supplier in exploring different ways to modify those products with AMETEK's needs in mind.

"We were able to work closely with some of our key suppliers to improve products by reducing waste," Munoz-Gonzalez says.

JOSE MUNOZ-GONZALEZ

Vice President of Supply Chain and Operational Excellence, AMETEK, Programmable Power Division

Bachelor's degree in industrial engineering

Master's degree in supply chain management, University of San Diego

WORKING SMARTER: His required integrative project at the University of San Diego involved developing a program to work with key suppliers to improve products by reducing waste.

By project's end, Munoz-Gonzalez had earned valuable course credit, and AMETEK's Programmable Power Division had improved its relationships with key suppliers. As a bonus, the suppliers could count themselves as beneficiaries, too. They came away from the experience with a more secure relationship with a major business partner. It was a win-win-win situation.

Munoz-Gonzalez not only learned valuable lessons from his own integrative project, but also from the challenges facing his fellow students. "The cohort system allows us to connect daily with teammates and share our experiences," he says. "That further enriches the learning process."

BUILDING RELATIONSHIPS

Another project, a collaborative effort with three members of his cohort, examined how various companies approach supplier relationships. Each member of the cohort reported on how their employers managed these relationships, and the final paper offered proposals for improving them.

Because project participants came from all facets of manufacturing–everything from commercial/industrial to government/military–the project demonstrated how different company cultures result in varied processes and practices.

Upon completing his master's degree in spring 2011, Munoz-Gonzalez found himself well on his way to realizing his vision of understanding and appreciating all the complexities of the supply chain. But because the supply chain is ever-changing, and needs to adapt daily to emerging situations, he'll continue to learn, on the job and from members of his cohort. ■


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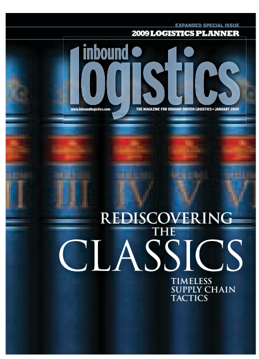

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I.T. Toolkit

by Joseph O'Reilly

In the midst of organizational change, furniture retailer Design Within Reach upgrades its demand forecasting and replenishment system to better control inventory.

When Just Enough Goes All the Way

Technology implementations are always fraught with uncertainty. There are stretched budgets and tight deadlines; integration and business continuity concerns. Comprehensive due diligence and a motivation for change predicate successful deployments.

For Design Within Reach, a Stamford, Conn., furniture and furnishings retailer, change was a constant. With new ownership coming on board, a new CEO in December 2009, and a location transition in December 2010, the company was headed in a new direction.

After recognizing that it needed a better system for managing inventory, the company began looking for a new demand-planning solution. The writing was on the warehouse wall.

"We stock 5,000 different furniture SKUs, coming from 12 countries," says James Mazzanti, chief information officer at Design Within Reach. "Each product has a unique lead time–and furniture is traditionally long–so any type of purchasing error has a big impact."

The company had previously been using a tried-and-true set of Excel-based rules for inventory planning. But the sheer volume of information that it was collecting warranted moving toward a best-of-breed solution to handle increasing complexity.

DEMAND-DRIVEN DESIGNS

Design Within Reach started out in 1999 as a catalog and e-commerce channel that matched furniture supply to demand. Founder Rob Forbes envisioned a business that allowed customers to appreciate the functionality and aesthetics of talented artisans who largely flew under the radar. His objective was to make "design within reach."

Today, Design Within Reach sells a 50/50 mix of stock and custom furniture products via its catalog business, online site, and from hybrid retail/

CONTINUED FROM PAGE 111

studios. The company keeps some product in inventory; and drop-ships other items from vendor partners directly to customers.

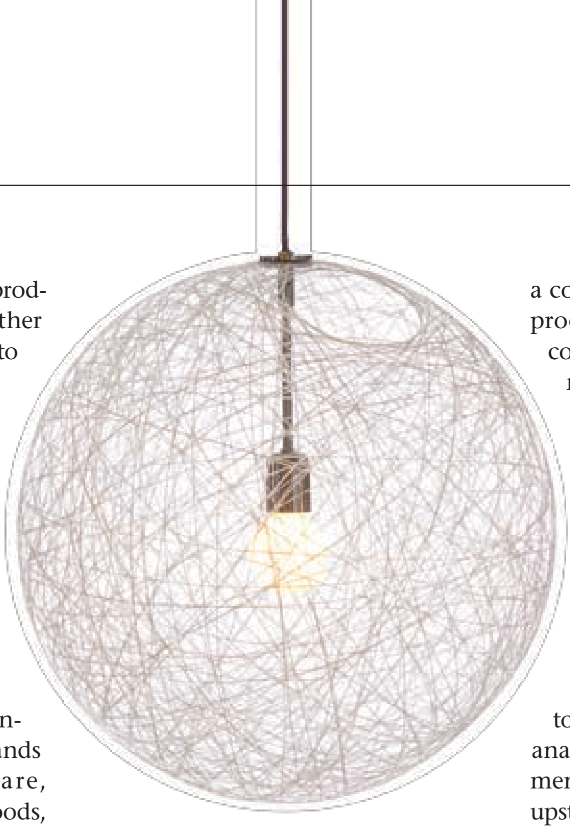
PARTNERED FOR PROGRESS

When the furniture company began exploring potential technology partners as part of its organizational makeover, it was referred to JustEnough Software.

The Newport Beach, Calif.-based company's technology is engineered around helping users forecast demand and manage inventory, with a number of top-shelf brands including Restoration Hardware, Kenneth Cole, Levi Strauss, Kraft Foods, and Nissan using its products.

JustEnough has created a demand management solution suite that enables retailers to plan better assortments, allocate products to optimal retail locations, and replenish inventory more accurately. The objective is to help retailers increase sales, eliminate stock-outs, and drive down inventory costs. It found a welcome ear in Design Within Reach.

"We found a customer that was motivated for change," says Greg Marmulak, vice president of professional services for JustEnough. "Design Within Reach team members wanted to embrace new software and business practices. It wasn't just forced on them."



JustEnough's software suite helps furniture retailer Design Within Reach see the light when it comes to demand and inventory management planning.

Most prospective customers that come to JustEnough want visibility and a common platform to build business processes from. "Excel is our leading competitor–it's the duct tape of planning," adds Marmulak. "We often find companies using Excel-based tools comprised of disjointed Excel spreadsheets. We come in and automate it all."

Design Within Reach was no different. It needed a better means to forecast demand, automate entry flows, manage stock, and make better purchasing decisions. It spent too much time trying to capture demand signals rather than analyzing that data and making recommendations on how to scale inventory upstream in the supply chain.

With business largely tied to sales and marketing promotions, Design Within Reach had every incentive to create a common platform that different functions within the organization could use more collaboratively.

CONSISTENCY THROUGH FLUX

Design Within Reach rolled out the full complement of JustEnough's demand forecasting and replenishment solution in March 2010, and was up and running in 12 weeks.

"Some of the technologies we were looking at were just too overwhelming," says Mazzanti. "JustEnough presented a logical and straightforward solution. Its people came in and hand-wrote the workflow on a whiteboard. They educated us on the process, made it intuitive, and raised the bar in terms of how the planning team works."

There were two phases to the installation. The first part consisted of having users demonstrate the system. JustEnough then worked in parallel with Design Within Reach for two months to make sure the integration went smoothly and that staffers were properly trained on how to use the system.

"It was a very engaging process, really a cultural fit. It wasn't just about the software," Mazzanti says.

More telling, Design Within Reach was in the middle of an organizational transition with new ownership and

CONTINUED FROM PAGE 112

capital infusion. The company went live with the implementation, relocated its headquarters, brought on a new team, then trained that staff on the system.

Kevin Vogl, vice president of inventory planning and logistics at Design Within Reach, was part of the new leadership. He initially harbored some reservations about the technology.

"I'm not a big fan of off-the-shelf solutions. Nothing is perfect," Vogl says. "So when I came on board, I was a little skeptical.

"But, in two weeks I embraced the system. Instead of formatting reports, we were doing analysis. The previous team wrote the operating manual and we were able to pick that up and run with it," he adds.

"We can deliver performance data to vendors and let them know what's selling, which allows them to make proactive decisions."

–**Kevin Vogl,** vice president of inventory planning and logistics, Design Within Reach

GETTING UP TO SPEED

Design Within Reach chose to install the full application on-site rather than deploy the hosted option–largely because of the proprietary information it was collecting. JustEnough's retail planning solution features three different modules–merchandise and assortment planning, markdown planning, and allocation and replenishment–that are generally phased in.

"The modules can be cohesive and dependent on each other, or they can be broken out per user need. The solution is very flexible," says Marmulak.

Beyond that, JustEnough helped Design Within Reach by acting as a supply chain planning consultant–in effect implementing best practices and collaborating on decisions to improve business processes. In turn, there have been qualitative benefits such as better visibility to demand and inventory requirements. From a benchmarking perspective, Design Within Reach gained quantitative value simply by being able to gather and analyze historical data.

Since JustEnough's solution went live in summer 2010, Design Within Reach has created a measure of consistency in its inventory management operations. Understanding demand trends, and replenishing against more accurate order data, enables the furniture retailer to increase turns and carry less inventory. It's no longer a matter of



Design Within Reach markets and sells its modern furniture and accessories through retail studios in the United States and Canada.

collecting information. The emphasis now is on analyzing this data flow and making educated decisions.

"Accessing five or six different Excel spreadsheets, and consolidating and simplifying views, allows for more complicated analysis," says Vogl. "If I want to know something, the data is there. It's customizable to the individual. All users, across the enterprise, have their own custom views and filters."

The solution also empowers departments to become more proactive in how they leverage this common data stream.

"Our business is highly promotions-driven and we maintain an active calendar," says Mazzanti. "When products drop off, we replace them with a different vendor. We link historical sales to a new product. And we share that information with different people in the organization."

For example, Design Within Reach's merchandising department has visibility to how well a certain product is selling, and can then align sales promotions accordingly. "It's very infectious," he adds.

Less than one year into the integration, Design Within Reach began reaping the full potential of greater demand-driven empowerment. There is still a learning curve, and collaboration is building, but the company is looking at its business in a much different way–as are its partners.

"We can deliver performance data to vendors and let them know what's selling," says Vogl. "It allows them to make proactive decisions."

The ability to give vendors projections is key. They may not buy on that, but Design Within Reach can tell them what's selling, which is a start. In the future, the company may be able to start evaluating vendors on their ability to supply inventory faster in a lean supply chain.

Opportunities to streamline business processes and transportation and logistics operations continue to materialize as the technology integrates further.

In terms of freight transportation on the import side, this level of granular data can help Design Within Reach max-load containers.

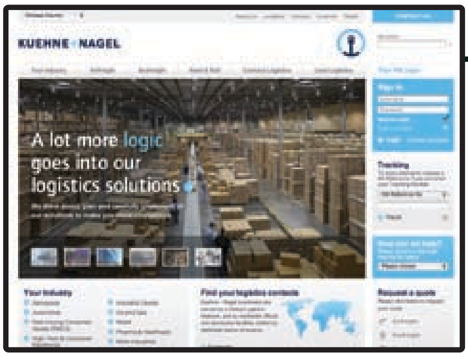
"There is also a major opportunity with domestic routing and longer lead times," explains Vogl. "If we have vendors in Maine and New Hampshire, we can consolidate loads, marry lead times, and ship full truckloads instead of LTL from New England to the Midwest."

Because furniture is a high price-point industry, inventory accuracy is at a premium. Every buy counts. Longer lead times mean significant dollars are tied up during transport. When mistakes happen, they are costly.

With more than enough information to accurately align inventory needs with demand patterns, Design Within Reach is finding increased efficiencies and economies within the organization and among external suppliers. ■

IN THIS SECTION:
3PLs – Career Solutions

3PLs



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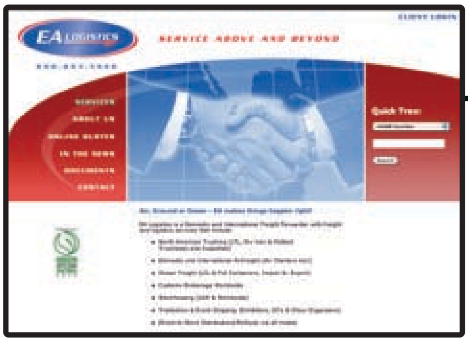

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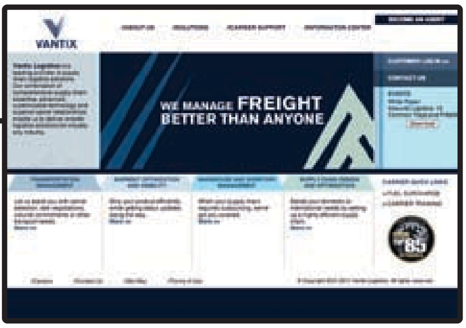

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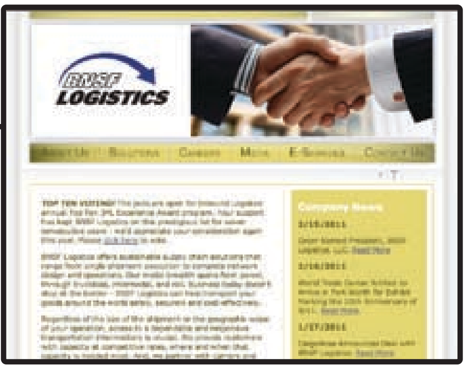

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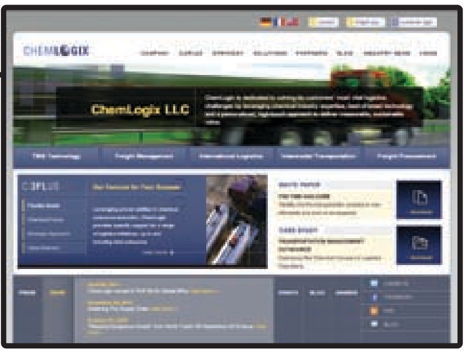

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Union Pacific Corporation operates North America's premier railroad franchise, covering 23 states in the western two-thirds of the United States. Union Pacific Railroad links every major West Coast and Gulf Coast port and provides service to the East through its four major gateways in Chicago, St. Louis, Memphis, and New Orleans. Additionally, Union Pacific operates key north/south corridors and is the only railroad to serve all six major gateways to Mexico. UP also interchanges traffic with the Canadian rail systems.

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

Reliability is everything. At WSI, that has been our approach to integrated logistics and supply chain solutions for more than 40 years. Our promise of Condition, Count & Time ensures accurate, timely, and sound performance – every time. Recognized as one of the top 3PL companies in North America, WSI delivers custom solutions for warehousing/distribution, fulfillment, transportation, import/export, information technology, and customer support services. Depend on WSI for increased efficiency, reduced costs, and absolute reliability.

CONSULTANTS

Franzetta & Associates, Inc. • www.franzetta.com

Franzetta & Associates has assembled some of the most respected supply chain experts in the world. We are not just consultants; we are proven successful industry leaders who created yesterday's standards and are driving today's innovations. Our focus is assisting firms to unleash the power of their supply chains. We can show you how to take control of your supply chain to reduce costs, improve customer satisfaction, and increase revenues. Our fees are lower than any of our competitors, yet we are far more reliable, non-intrusive, and efficient. Call 814-466-9010.

IN THIS SECTION:

Compliance/Drawback – Forwarders

CUSTOMS COMPLIANCE/DRAWBACK

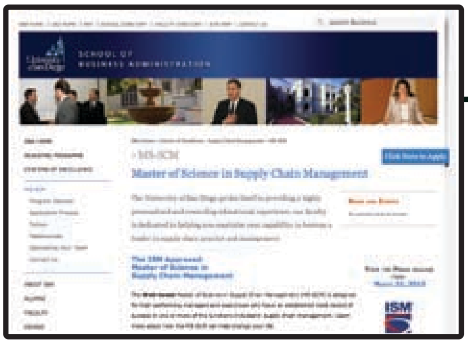
Dutycalc • www.dutycalc.com

Drawback software and services from a drawback company makes good sense. Dutycalc's Drawback.NET software package is recognized as the number-one Drawback Management System nationally. More than 300 system users benefit from our 30-plus years of drawback expertise. Additional services offered include application prep, rulings, claims prep, ABI drawback claim filing, audit assistance, compliance assessment, and more. Whether your needs are software or services, Dutycalc is the logical choice. For a free online system demo, email info@dutycalc.com, or call 530-637-1006 (PST).

EDUCATION

University of Arkansas • www.gsb.uark.edu

The Sam M. Walton College of Business is a nationally competitive business school that combines excellent student learning experiences with quality research serving Arkansas and the world. The school has a three-fold mission: to educate a diverse population of students to be tomorrow's business leaders; to discover and disseminate knowledge through research; and to share business expertise in support of Arkansas and the business and academic community.



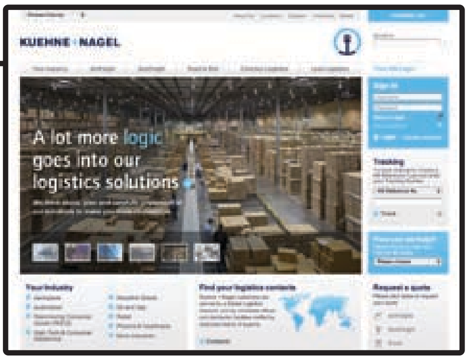
University of San Diego • www.sandiego.edu/msscm

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

FREIGHT FORWARDERS

Kuehne + Nagel • www.kuehne-nagel.com

Kuehne + Nagel, a global leader in transportation and logistics, is one of North America's premiere integrated logistics services providers. Our superior service and end-to-end supply chain capabilities–including sea- and air-freight, 3PL, 4PL, distribution, and information management solutions–turn your logistics challenges into a competitive advantage. A global leader in international forwarding, Kuehne + Nagel ranks as the Number-1 global seafreight forwarder, Top-3 global air cargo forwarder, and Top-3 global contract logistics provider. The company, founded in 1890, has more than 58,000 employees in 900 locations in 100 countries.



IN THIS SECTION:
Green Logistics – Trucking

GREEN LOGISTICS

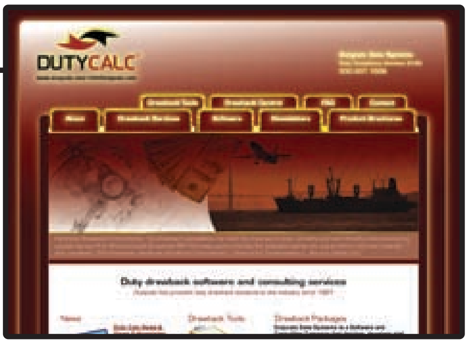
CSX Intermodal • www.csxi.com

CSX Intermodal (CSXI) is an intermodal company with more than 1,000 employees serving customers from origin to destination with its own truck and terminal operations plus the assets of a dedicated domestic container fleet. CSXI, which is headquartered in Jacksonville, Fla., serves all major East Coast ports, operates more than 40 terminals across the United States, connects to all major Class I carriers, and provides transcon shipments from coast-to-coast in CSXU containers.

LOGISTICS IT

Dutycalc • www.dutycalc.com

Drawback software and services from a drawback company makes good sense. Dutycalc's Drawback.NET software package is recognized as the number-one Drawback Management System nationally. More than 300 system users benefit from our 30-plus years of drawback expertise. Additional services offered include application prep, rulings, claims prep, ABI drawback claim filing, audit assistance, compliance assessment, and more. Whether your needs are software or services, Dutycalc is the logical choice. For a free online system demo, email info@dutycalc.com, or call 530-637-1006 (PST).



SHIPPING SOFTWARE

ShippersEdge • www.shippersedge.com/info

Shipping software for companies of all sizes. Easy to set up and use. Works with all carriers and modes. Feature packed. Use as a stand-alone application or integrate with your other software. ShippersEdge offers a lite version for smaller companies with limited shipping. It also has a full TMS available for large-scale shipping operations. Free trial now available for ShippersEdge.

TRUCKING

YRC • www.yrc.com

If you are looking for seamless transportation throughout Canada, Mexico, and the United States, look to YRC. The carrier's reliable two-day, three-day, and coast-to-coast service connects key markets with guaranteed delivery windows. YRC also offers dedicated protective services for a single shipment or entire trailer; special project and logistics management; and transportation and logistics for import and export shipments. Find out more about YRC by visiting the Web site.

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.

GENCO ATC

TITLE: ***Product Lifecycle Logistics Can Reduce Supply Chain Costs an Average of 10%-20%***

LENGTH: *9 pages*

DOWNLOAD: *http://tinyurl.com/Genco3*

SUMMARY: A product begins its life with maximum profit potential during the manufacturing process. But, as that product moves through an increasingly complex global supply chain, excess time and handling costs erode its profit. Product Lifecycle Logistics is a game-changing approach to treating the supply chain as a continuous whole and, in the process, lowering supply chain costs an average of 10 to 20 percent.

Management Dynamics

TITLE: ***eBook: Direct Import Strategies for Retailers***

LENGTH: *12 pages*

DOWNLOAD: *http://tinyurl.com/mgmtdynamics3*

SUMMARY: Margin pressure has led many retailers to source goods from low-cost countries—initially through distributors or international procurement operations, and increasingly through direct import strategies. This new eBook explains how a direct import program can help retailers improve coordination, reduce order cycles, enhance compliance with Customs 10+2, and reduce inbound transportation costs.

C.H. Robinson

TITLE: ***Supply Chains: Where to Find the Biggest, Fastest Transportation Savings***
LENGTH: *12 pages*
DOWNLOAD: *http://tinyurl.com/42pnqhd*
SUMMARY: It takes time and effort to analyze supply chains and determine the best way to optimize them. Where should you begin? In this C.H. Robinson whitepaper, you'll discover 10 ways to obtain greater transportation savings with the least amount of effort. In addition, this paper answers the question of where you should focus your talents first, second, and third to reap the biggest savings and achieve the quickest ROI.

TMSi Logistics

TITLE: ***Are You Ready for a 3PL?***
LENGTH: *3 pages*
DOWNLOAD: *http://tinyurl.com/TMSi3*
SUMMARY: Outsourcing to a qualified third-party logistics provider (3PL) can provide cost savings that are difficult to achieve when a company's supply chain is managed in-house. To learn how to begin your search for the right 3PL partner, download TMSi's complimentary whitepaper.

Ryder

TITLE: ***Supply Chain Security: Preventing Cargo Theft***
LENGTH: *8 pages*
DOWNLOAD: *http://tinyurl.com/4az29kd*
SUMMARY: Today's economy is driven by a global supply chain. Goods are moved around the world 24/7 – packaged and transported by air, rail, sea, or truck. As the supply chain grows more complex, so does the ability to secure them. One of the biggest challenges affecting businesses today is cargo theft, and the resulting potential disruption of the supply chain. Learn some best practices in security that will help your company combat the risks and dangers of cargo theft.

Laufer Group International

TITLE: ***"I Need to Add an NVOCC to the Mix"***
LENGTH: *3 pages*
DOWNLOAD: *www.laufer.com/laufersite/pdf/LGI058_whitepaper.pdf*
SUMMARY: Many carrier-direct shippers say they want to add a Non-Vessel-Operating Common Carrier (NVOCC) to their service provider mix in order to obtain pricing and space in an uncertain market. Laufer Group International, however, believes that adding an NVOCC will simply add another layer to a process that is already broken. In this whitepaper, Laufer challenges shippers to think differently; to take a step back and look at what the capacity crisis of last year revealed about their supply chain in order to forge ahead and prevent a similar outcome.

Share your whitepaper with *IL* readers!

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

3PLs

UTi Worldwide

UTi Worldwide's new U.S.-Mexico cross-border service operates from two major U.S. distribution facilities in Texas and seven Mexico facilities. The suite of cross-border services includes Harmonized Tariff Schedule verification; physical verification; Mexico in-house brokerage; Mexico customs brokerage documentation; crossdocking; transportation; full truckload; less-than-truckload; consolidation; hot shots; and specialized trade, as well as a range of global services, including air, ocean, and motor freight forwarding.

www.go2uti.com 562-552-9400

▲ Printers: Printronix

Suitable for use in manufacturing, warehousing, shipping, and distribution facilities, the TallyGenicom 6600 series line matrix industrial printers can be customized through features such as front paper access, form stacking, top or rear output, and a low-noise cabinet. All 6600 series printers are Energy Star qualified, and improve the total cost of ownership through a 30-percent reduction in consumables cost per page.

www.printronix.com 800-665-6210

CEVA Logistics

A new 28,000-square-foot, 14-door crossdocking facility in Otay Mesa, Calif., increases CEVA's docking space by 25 percent, providing quick and easy access for material consolidation and pickup. The facility also provides raw material and finished goods receipt, order fulfillment services, and storage.

www.cevalogistics.com 281-618-3100

EXPEDITED

UPS

UPS announced a direct weekly flight from Guam to Hong Kong, offering service to the express package, military, and forwarder communities, and providing capacity for the Asia export market. The Guam service uses UPS's largest aircraft, the B747-400 freighter, which supplies 258,000 pounds of payload capacity, and is well suited for carrying both small packages and heavy freight.

www.ups.com 800-PICK-UPS

MOBILE DEVICES & APPS

Specialized Transportation Inc. (STI)

Available from the Apple store, STI's new iPhone app provides shipment status, current location, actual or planned delivery date, delivery signature, transit guide, and feedback capabilities.

www.stidelivers.com 800-443-0940

Datalogic

The PowerScan PBT8300 laser scanner with Bluetooth wireless technology provides standard connectivity in manufacturing and warehouse environments. Compatible with vehicle mount terminals on lift trucks, the scanner was designed and tested to withstand extreme shock conditions, exceeding 50 drops from six feet.

www.scanning.datalogic.com	800-695-5700

AIR

Panalpina

A new weekly Boeing 747-400F direct cargo flight enhances the existing Dragon Wings express air service from Hong Kong to Huntsville, Ala., and strengthens the Brazilian Wings express service, which offers a transit time of 30 hours from Hong Kong via Huntsville to São Paulo, Brazil.

www.panalpina.com	973-683-9000

Lufthansa Cargo

A pharmaceutical hub for temperature-sensitive air freight opened at Hyderabad Airport in India. The carrier also plans to expand its fleet of cold-chain containers in Hyderabad.

www.lufthansa-cargo.com	800-LH-CARGO

PARTNERSHIPS

Voxware and RedPrairie

Voxware and RedPrairie have partnered to integrate Voxware's voice software with RedPrairie's warehouse management software (WMS). Voxware technology is available from RedPrairie through a reseller agreement, and operates as an extension to RedPrairie's WMS product offerings.

www.voxware.com	609-514-4100
www.redprairie.com	877-733-7724

CONTINUED FROM PAGE 125

Damco and Supply Chain Optimizers

Third-party logistics provider Damco and packaging consulting firm Supply Chain Optimizers teamed to offer a packaging optimization service for cargo shipments. In the end-to-end packaging design process, the companies review shippers' product portfolios, then model, test, and implement solutions that eliminate waste, reduce logistics costs, and minimize environmental impact.

www.damco.com	973-514-2076
www.supplychainoptimizers.com	716-689-4601

FREIGHT FORWARDING

FedEx Trade Networks

New operations in Le Havre, France; Barcelona, Spain; Bratislava, Slovakia; Istanbul, Turkey; and Delhi, India provide freight-forwarding solutions with services such as the ability to manage control of goods in transit from point of origin to final-mile delivery.

www.ftn.fedex.com	800-249-2953

John S. Connor Inc.

John S. Connor Inc. expanded its vessel agency operations in New Jersey to include customs brokerage and freight forwarding services.

www.jsconnor.com	908-351-3996

DHL

The Genghis Khan Connection provides tri-weekly rail service during the high season from April to October, linking Ulaanbaatar, Mongolia, to Tianjin, China. The service helps shippers avoid peak season congestion at regional border towns, seaports, and airports.

www.dhl.com	800-426-5962

CARGO MONITORING

FreightWatch International

The FreightWatch Geo F2 Tracker device now provides real-time shipment temperature and humidity monitoring. In the event of a temperature exception outside a specified range, shippers are notified immediately by the FreightWatch Command & Control Center, enabling immediate corrective action. The Geo F2 Tracker can monitor temperatures from -4°F to 140°F.

www.freightwatchintl.com	512-225-6490

INTERMODAL

CN

CN completed capacity improvements to accommodate growing container volumes at its Brampton Intermodal Terminal. The enhancements include adding new track and extending existing track, which increased rail capacity by 15 percent; staging CN containers off-site, which created 25 percent more ground space for international containers; adding five new cranes, and increasing the terminal's labor force by 10 percent.

www.cn.ca	888-668-4626

SOFTWARE

Accellos

The latest version of supply chain intelligence solution *Accellos One Pulse* features enhanced key performance indicator authoring tools, customizable alerts, and improved reporting capabilities.

www.accellos.com	719-433-7000

Descartes Systems

New *Port Flow Control* solutions harness the data and connected community on Descartes' Global Logistics Network to improve ocean port productivity, performance, and security. Designed to help manage shipment flow into, within, and out of ports, the solutions link port community members and existing systems to provide a secure platform for exchanging and accessing shipment data. Users can then leverage this data to make efficient use of assets through advance notification systems for cargo pick-up and delivery; real-time scheduling of assets for cargo movement; and for secure trade lanes within the port.

www.descartes.com	800-419-8495

PAR Logistics Management Systems

Two new asset management solutions generate real-time fleet information. DT200, designed exclusively for dry van trailers, and FT200, designed specifically for flatbeds and chassis, send real-time alerts on trailer status, location history, and information such as door activity. Users select the alert types and frequency, choosing to receive regular updates or manage by exception and get alerts only when the status is outside preset limits.

www.parlms.com	315-738-0600

▲ **Tools: OLFA**

The SK-10 concealed-blade, gooseneck-style safety knife cuts shrink wrap, plastic strapping, stretch wrap, plastic sheeting, and bubble wrap. It features adjustable settings that create four cutting points on a single-edge utility blade.

www.olfa.com	800-962-OLFA

TAKE Solutions

Xtended Process Control supplier relationship software advances purchasing cycles by offering new vendor-managed inventory and visibility features that provide suppliers full visibility into inventory levels across warehouses and external depots. The new software also offers improved demand collaboration, advanced package management, increased purchase order visibility, and desktop label printing.

www.takesolutions.com	609 -720-1002

TRANSPORT EQUIPMENT

Klinge Corporation

The Blast Freezer Model CBU-30 refrigerated container holds cargo between -4°F and -76°F. Designed primarily to store and transport high-value fish such as yellowfin tuna, the blast freezer ensures full airflow, even in loads with very high cargo internal pressure drops. An evaporator fan presses air through the load to ensure even temperatures.

www.klingecorp.com	717-840-4500

CALENDAR

YOUR LOGISTICS DATEBOOK

July 25-27, 2011, Performance-Based Logistics (PBL), Alexandria, Va. Suitable for both logistics-focused military personnel and military equipment manufacturers, this logistics conference provides an understanding of performance-based logistics and offers insights on next-generation lifecycle product support assessment and implementation. Discussions cover topics such as the evolution of PBL product support.

888-482-6012
www.wbresearch.com/pblusa

August 24-26, 2011, The Lean Enterprise and the Supply Chain, Knoxville, Tenn. This course, sponsored by the University of Tennessee's Center for Executive Education, explains the role of rate-based planning and lean manufacturing methods in an integrated supply chain. Attendees learn the tools of lean manufacturing and principles governing flow in manufacturing processes; rate-based planning techniques for coordinating operations across companies; and methods for evaluating suppliers' abilities to function in an integrated supply chain. Participants perform hands-on tasks such as evaluating a supplier's planning and scheduling processes and manufacturing capabilities.

865-974-5001
http://thecenter.utk.edu

August 29-31, 2011, Supply Chain Leadership Forum, Orlando, Fla. Tompkins Supply Chain Consortium presents this forum, which includes a kickoff event focusing on top trends impacting the supply chain; an audience response-driven survey on peak-season planning and execution; and educational and networking sessions on topics such as supply chain uncertainty, tax-efficient supply chain management, and transportation regulations.

919-855-5424
www.supplychainconsortium.com

September 11-15, 2011, American Association of Port Authorities 100th Annual Convention, Seattle, Wash. Through technical and policy committee meetings, business sessions, and networking opportunities, port professionals and others in the marine transportation industry explore the latest global economy trends and expectations, the need for infrastructure investment, and how shippers, carriers, service providers, and the local community can help green the supply chain.

877-795-2481
www.aapa2011.org

September 12-16, 2011, Achieving Supply Chain Transformation, University Park, Pa. Participants in this program at Penn State's Smeal College of Business learn how best-in-class companies adapt their supply chains to improve their competitive position and shareholder value. Discover how to optimize three critical metrics–profit margin, cash-to-cash cycle time, and customer response time–while identifying supply chain capabilities to take advantage of.

814-865-3435
www.smeal.psu.edu

September 18-21, 2011, 26th Annual Material Handling and Logistics Conference, Park City, Utah. Sponsored by Dematic, this event offers more than 60 sessions addressing strategy and innovation ideas. Interactive technical roundtables deliver tactical results; technology users share project lessons; and plenty of tutorials and workshops expand your knowledge of emerging materials handling technologies and practices in warehousing and distribution. Keynote speakers include former ESPN *SportsCenter* host Dan Patrick, Navy SEAL and author Marcus Luttrell, and race car driver Mario Andretti.

262-860-6546
www.mhc2011.com

September 28-30, 2011, Supply Chain Council Executive Summit, Palm Springs, Calif. This event covers lessons learned from the recent economic downturn and natural disasters; strategies for improving efficiency and responsiveness; methods for keeping up with rapidly evolving technology; and sustainability's impact on supply chains.

202-962-0440
www.scc-execsummit.org

October 2-5,2011, CSCMP Annual Global Conference, Philadelphia, Pa. At the Council of Supply Chain Management Professionals' conference, learn ways to cut supply chain costs, boost efficiency, and improve your bottom line; network with colleagues from around the world; and discover new and innovative ideas that will keep you and your supply chain competitive. FOX Business Network anchor Stuart Varney provides the keynote address, offering a positive take on the economy, and describing what the current financial situation means for you and your business.

630-645-3453
http://cscmpconference.org

October 16-20, 2011, World Congress on Intelligent Transportation Systems (ITS), Orlando, Fla. This conference focuses on providing ITS professionals, transportation executives, and engineers the opportunity to learn more about the latest transportation technologies, legislation, research programs, and other initiatives implemented around the world. Hosted by the Intelligent Transportation Society of America, the event exhibits congestion- and cost-saving systems that reduce driving time, help drivers find more efficient routes or alternate travel options, improve emergency response times, and reduce vehicle emissions.

800-374-8472
www.itsa.org

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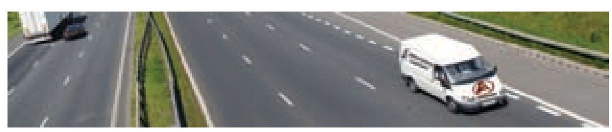

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3PLs

- **C.H. Robinson Worldwide** Cover 2–pg. 1
  Managed TMS provides comprehensive capabilities that ensure global visibility, business intelligence, and the enhanced supply chain outcomes you've been looking for.
  www.chrobinson.com 800-323-7587

- **CaseStack** pg. 96
  Thousands of suppliers turn to CaseStack for innovative consolidation programs, efficient warehousing systems, and streamlined transportation management.
  www.casestack.com 855-638-3500

- **DSC Logistics** pg. 29
  Can you really manage change? The answer is yes. The answer is also DSC Logistics, for supply chain strategies and solutions that drive change instead of letting change drive you.
  www.dsclogistics.com 800-372-1960

- **EA Logistics** pg. 90
  Whether by truck, air, ocean, or rail, consider EA Logistics for your everyday shipping, trade show shipments, rollouts, and warehousing. Its Delivered GrEAn program helps support your green initiatives.
  www.ealogistics.com 800-863-5948

- **The Evans Network of Companies** pg. 112
  The Evans Network of Companies' ECO-Match program is reducing carbon emissions by partnering with customers to match up loads.
  www.evansdelivery.com 877-39-EVANS

- **GENCO ATC** pg. 16
  GENCO ATC's holistic Product Lifecycle Logistics approach simplifies the management of complex, compartmentalized supply chains.
  www.gencoatc.com 800-378-9671

- **Geodis Wilson** pg. 52
  Geodis Wilson provides clients with integrated solutions and unrivaled customer service. For a freight management solution that will ensure your company's success, contact Geodis Wilson.
  www.geodiswilson.com 877-469-0510

- **Kane is Able** pg. 25
  Kane is Able helps CPG manufacturers distribute products nationwide with integrated warehousing, packaging, and transportation services designed for the CPG industry.
  www.kaneisable.com 888-356-KANE

- **Kenco Logistic Services** pg. 93
  Kenco Logistic Services bends over backward to solve your ever-changing challenges.
  www.kencogroup.com 800-758-3289

- **Lynden** pg. 41
  From innovative containers to equipment that requires less fuel and reduces harmful pollutants, Lynden works to use resources more efficiently.
  www.lynden.com 888-596-3361

- **Menlo Worldwide Logistics** pg. 7
  You can trust Menlo Worldwide Logistics to give you every advantage by applying proven processes to solve complex supply chain problems.
  www.menloworldwide.com/il 630-449-1084

- **NFI** pg. 32
  Being a sustainable company is important to NFI, so it furthers its green practices every day.
  www.nfiindustries.com 877-NFI-3777

- **Performance Team** pg. 71
  Performance Team is a national leader in custom end-to-end logistics solutions for the retail and manufacturing industries.
  www.ptgt.net 866-775-5120

- **Ryder** pg. 11
  Powerful, integrated, source-to-shelf solutions for the food, beverage, and consumer packaged goods industries are now part of the Ryder Supply Chain Solutions portfolio.
  www.ryderscs.com 888-887-9337

- **TransGroup Worldwide Logistics** pg. 51
  It's easy to lose track of shipments when you're managing the supply chain by yourself. Why not try TransGroup Worldwide Logistics?
  www.transgroup.com 800-444-0294

- **Unyson Logistics** Cover 3
  Unyson Logistics helps you drive out supply chain costs by creating solutions that offer unity, visibility, and stability.
  www.unysonlogistics.com/savenow 866-409-9759

- **Weber Logistics** pg. 72
  Weber's expertise includes contract and shared warehousing, freight management, LTL, and TL services.
  www.weberlogistics.com 855-GO-WEBER

- **Werner Enterprises** pg. 20
  Werner is a knowledgeable, experienced partner you can trust to safely implement an appropriate strategy designed specifically for your unique supply chain needs.
  www.werner.com 800-228-2240

Career Development/Education

- **American Public University (APU)** pg. 106
  APU offers bachelor's and master's degrees in transportation and logistics management entirely online, designed for busy logistics professionals.
  www.studyatapu.com/il 877-777-9081

- **American Society of Transportation and Logistics Inc. (AST&L)** pg. 121
  AST&L's Transportation and Logistics Certification gives you the industry knowledge and contacts to separate yourself from the pack.
  www.astl.org 202-580-7270

- **Broad Graduate School of Management, Michigan State University** pg. 106
  Get a master's degree from one of the top-rated supply chain management programs in the country.
  www.bus.msu.edu/supplychain/msscm 517-432-6458

- **Executive Masters in International Logistics (EMIL), Georgia Tech** pg. 109
  EMIL keeps key employees on the job while they learn to reduce logistics costs and improve supply chain efficiencies.
  www.emil.gatech.edu 404-385-2538

- **Institute of Logistical Management** pg. 108
  The Institute of Logistical Management provides distance learning in many areas of logistics and supply chain management.
  www.mylogisticscareer.com 888-ILM-4600

- **JobsinLogistics.com** pg. 109
  Find a job in logistics or transportation online at JobsinLogistics.com, the top logistics job board.
  www.jobsinlogistics.com 877-JOB-POST

- **University of San Diego** pg. 105
  Drive efficiency and build profitability for your company with the University of San Diego's online master's in supply chain management.
  www.sandiego.edu/msscm 619-260-7901

- **Vantix Logistics** pg. 107
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THE LAST MILE

Testing Extreme Green

When it comes to sustainability, some companies accept the status quo while others push innovation to the outer limits.

UPS's recent announcement that it is field-testing a new composite vehicle would have been enough to create a buzz. That it's embarking on a *Road Rules*-type extreme adventure to make sure the new CV-23 prototype is worthy of endorsement and use has only raised the bar.

The company is preparing to test the composite car in five extreme locations to see if it can withstand the pressure of some of the roughest back roads in the country, and endure serious weather conditions while delivering greater fuel efficiency. This initiative is part of UPS's larger "rolling laboratory" approach to R&D and sustainability, testing the environmental benefits of multiple technologies and designs.

The composite car is a joint venture between walk-in van manufacturer Utilimaster and commercial vehicle and heavy truck maker Isuzu to produce five prototype high-strength, lightweight composite vehicles, which have high-efficiency four-cylinder engines.

UPS has chosen five extreme scenes for field testing that began in April 2011 and will continue until December to determine the vehicle's ability to handle all types of conditions. Locations include:

Flint, Michigan: long urban route near Isuzu headquarters
Albany, New York: tough winter conditions
Tucson, Arizona: severe desert heat
Lincoln, Nebraska: rough country back roads
Roswell, Georgia: urban route near UPS's automotive team

The goal is to see if the CV-23 withstands the rigors of UPS's daily delivery routes while achieving a 40 percent increase in fuel efficiency over the P70.

The 150-horsepower truck utilizes an **Isuzu four-cylinder diesel engine and a six-speed Aisin automatic transmission**. The engine is smaller than a traditional UPS diesel engine and the hope is the smaller engine will consume less fuel during daily operations.

The Utilimaster/Isuzu CV-23 has **630 cubic feet of cargo space** compared to 700 cubic feet in the existing P70 diesel package car.

UPS expects the vehicle will be **traditionally fueled, with an alternative design** for both its engine and chassis.

The CV-23 is approximately **1,000 pounds lighter** than the P70 due to the use of composite body panels.

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