EXPANDED SPECIAL ISSUE

2010 LOGISTICS PLANNER

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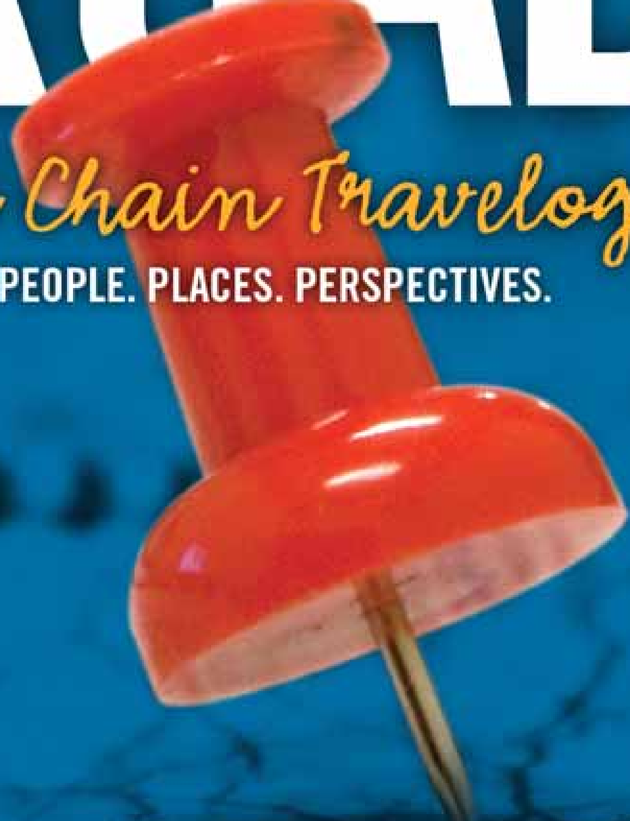
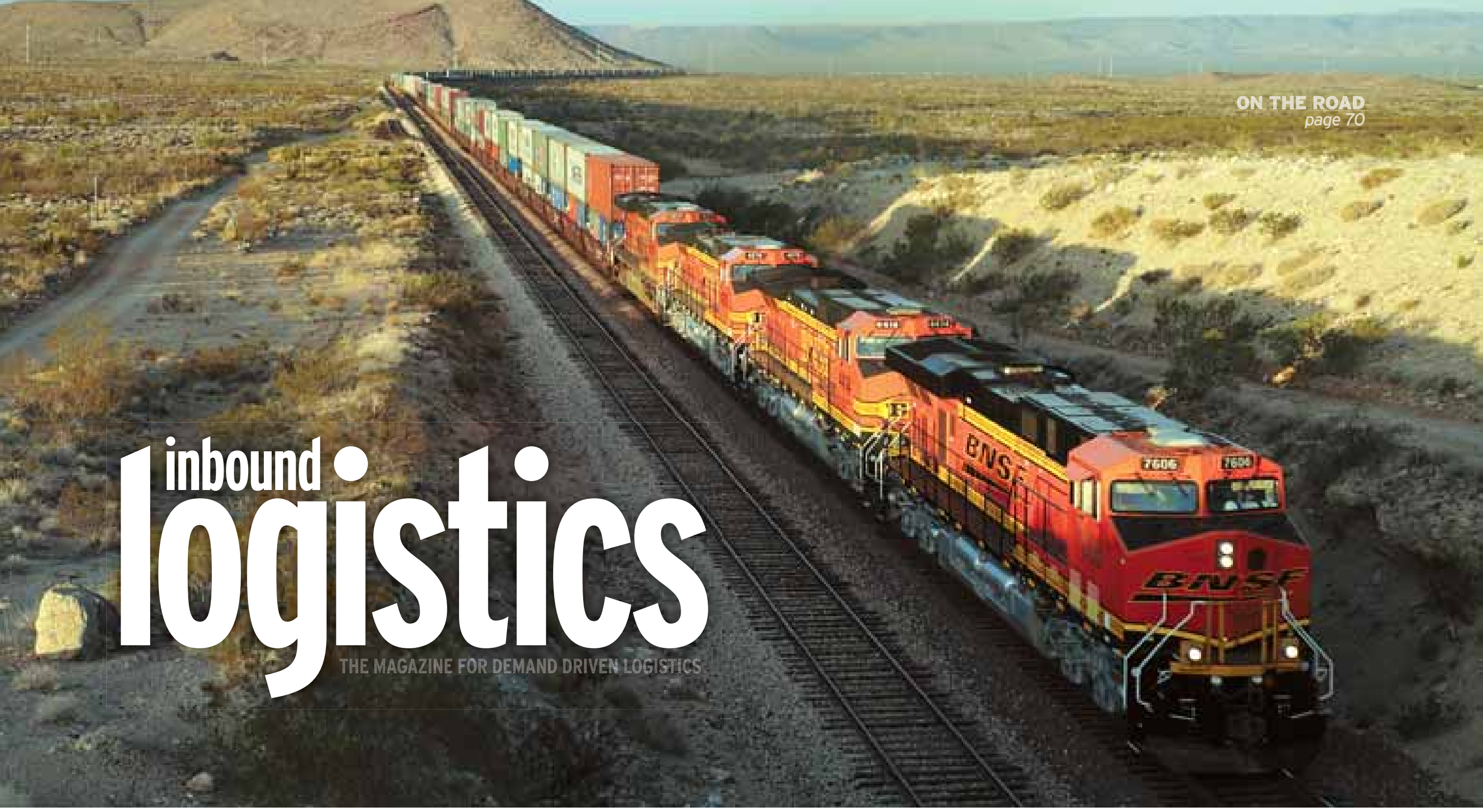
THE MAGAZINE FOR DEMAND-DRIVEN LOGISTICS • JANUARY 2010

ON THE ROAD

A Supply Chain Travelogue

PEOPLE. PLACES. PERSPECTIVES.





ON THE ROAD *page 70*

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THE MAGAZINE FOR DEMAND DRIVEN LOGISTICS

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INSIGHT

INPRACTICE

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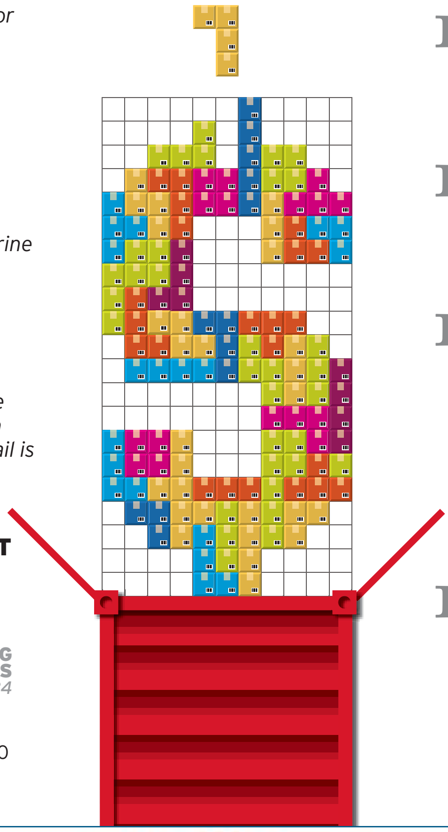
INFO

INBRIEF

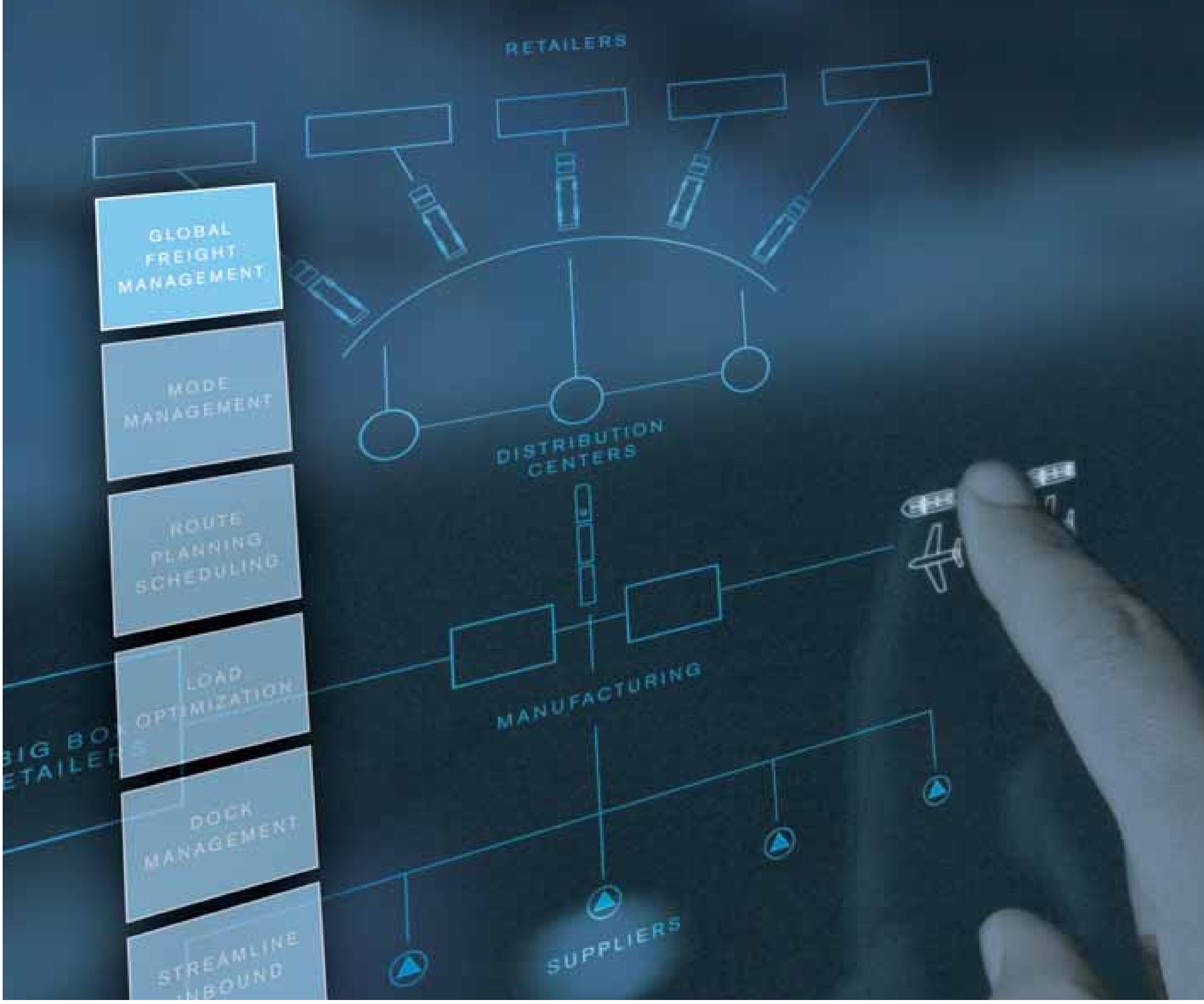
INBRIEF

INDEPTH



CONTAINING
OCEAN COSTS
page 134

FEELING PRESSURE
TO REDUCE FREIGHT COSTS?



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INSIGHT

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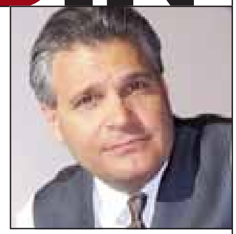
CHECKING IN



by Keith Biondo | **Publisher**

"Bring It!"

Last weekend, I went through a stack of newspaper clippings of economic and industry news from the past year, and made two piles: good news and bad news. Guess which pile was larger? In an ostrich moment, I went to the shredder and irrationally fed the bad news in, sheet by sheet.

As I fed the shredder, it seemed like I was reading headlines from 30 years ago, when I first began working in the transportation sector. It was a time of economic crises, much like today.

But while the early 1980s was an economic bust, it was also a time of renewal. Transportation professionals faced many challenges beyond their control. Their response to that crisis was a stubborn refusal to give in and give up–a "bring-it" attitude.

And so it became a boom time of transportation innovation, adoption, and adaptation. Carriers offered expanded coverage and innovative solutions, adopting and applying myriad technologies to logistics. Acceptance of demand-driven logistics practices grew. A broad range of 3PLs emerged. Logistics education programs exploded. And, most importantly, functional silos crumbled across purchasing, manufacturing, operations, transportation, and logistics.

That's how people in our industry deal with tough times. You dig deep and fight to create wealth for your companies, refine your skill set, enhance logistics practices, adapt and adopt new ideas, and channel privation by producing productivity gains–crafting a well-developed, practical nature honed by rationalizing thousands of ever-changing variables.

You build on that refusal to be defeated incrementally, hour by hour, day upon day of achieving the small triumphs of taming a supply chain network. It eventually toughens your character so that you may not always welcome a challenge, but you certainly don't back away, and you always relish the win.

From the corner of a loading dock, across a yard, around a cubicle, through a warehouse, and to the corner office, there exists a sense of practicality created by years of orchestrating seamless global product flow.

Every missed commitment–no matter which value chain partner is at fault–could mean a missed delivery, a lost sale, a lost customer, a lost dollar, and certainly a lost opportunity to make a difference.

Will what happened in our discipline in the 1980s happen again now? Can transportation, logistics, and supply chain professionals help drive the kind of change that will make a difference?

Yes, for their own companies. And isn't that the real economy–thousands of companies chasing individual excellence? Who knows which way 2010 will go? But I can already hear you say, "Bring it!" ■

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CHECKINGIN

Felecia Stratton

by Felecia Stratton | **Editor**

"Brought!"

In tough times, logistics managers react to demand and respond to adversity. Every day, your customers and CEOs raise new questions and challenges, which you meet through creativity, innovation, and a "bring-it" attitude. A logistician's resilience is valuable when opportunities are ripe, but it's invaluable when problems persist.

This indomitable bring-it attitude was pushed to the max in 2009 by a confluence of external pressures and increasing demands from your management and customers. In this issue, *Inbound Logistics* bears witness to your determined efforts to meet adversity head-on.

Our cover article, *On The Road: A Supply Chain Travelogue*, (pg. 70) illustrates your mettle. Veering off the beaten path in search of new perspectives, Senior Editor Joe O'Reilly finds characters and character in locations where 10,000-foot trains, visions of an Aerotropolis, inside-the-box solutions, and good old customer service are the norm–even in abnormal times.

Merrill Douglas' article, *Containing Ocean Costs* (pg. 134), reveals another example of adversity driving innovation. Offshore, some U.S. importers are consolidating product and pallets by store, not by SKU, for delivery to retailers. In so doing they are eliminating stateside deconsolidation and reaping the economies of fewer touches.

In *Green Reverse Logistics Brings Many Happy Returns* (pg. 152), Amy Roach Partridge demonstrates how manufacturers are getting downright practical to squeeze every ounce of value from their enterprises by recognizing that the flow goes both ways.

These examples, and others in the issue, document how people in our industry can, will, and do face any challenge that is thrown at them.

Perhaps covering these types of successes all year instilled that same bring-it attitude in the *Inbound Logistics* team. Putting together this 456-page magazine, and related multi-media offerings, is a monumental task. I want to sincerely thank Sonia Casiano, Michael Murphy, Mary Brennan, and Shawn Kelloway for their design/production/new media efforts; and Joseph O'Reilly and Catherine Harden for working their editorial magic. They all brought the bring-it attitude to creating this year's Planner in the hopes that you get the most out of it.

And to make sure you do get the most out of *IL* all year, we've expanded the editorial staff with the addition of Perry A. Trunick, who brings 30-plus years of experience from other logistics and transportation publications that you may recognize. He'll cover the industry through feature articles and his new monthly column, *In Perspective*, which debuts on page 12.

As always, the anchor of this issue is the Logistics Planner Profiles (pg. 307), an in-depth review of leading transportation and logistics companies. These segment leaders know a thing or two about a bring-it attitude, as they have consistently responded to your demands for transportation and logistics excellence. With your resilience, and help from the leaders profiled in these pages, you will be ready to respond, no matter what 2010 throws at you.

Bring it? Brought! ■

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INPERSPECTIVE

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

FROM THE EDITOR: *Join me in welcoming Perry Trunick to the* Inbound Logistics *editorial staff. Perry comes on board as associate editor, bringing with him more than 30 years of logistics journalism experience at a variety of industry publications. In his monthly column, and in regular feature articles, he'll share his perspective on issues you face.*

Shaken and Stirred

Let's ensure infrastructure development is used for long-term economic growth, not short-term political gain.

Business and politics don't mix well, especially when it comes to critical infrastructure. In the 30-plus years I've been involved in logistics, manufacturing, and supply chain management as a journalist and communicator, the same story keeps repeating.

Politicians tout infrastructure projects they say will create jobs in the short term. The short term for politicians is the next election, and, consequently, they aren't looking for projects that require five years of research, planning, and evaluation, then another five years to construct. The measure of a project should be its contribution to sustainable job growth.

Congressmen approached the economic stimulus with a pocket full of "shovel ready" projects in their districts. From a logistics perspective, I have to ask why those projects have been on hold if they are so critical to the economy? If they are needed to facilitate the flow of commerce, they should have been a top priority before the economic stimulus was proposed.

U.S. manufacturers and retailers (and ultimately consumers) won't benefit much from short-term growth in construction jobs. The direction some politicians have chosen will hamper economic growth once construction is completed and those workers are again jobless.

A case in point is right in my own backyard at the Port of Cleveland. (Look in your own backyard or look in the backyard of your company's plants or distribution centers and you'll find your own examples.) The county government that operates the port has used its ability to offer bonds as a funding tool for projects that have nothing to do with port operations. Included are the Rock and Roll Hall of Fame and parking for a Veterans Administration hospital located off the port site. Both worthy projects, but not port related.

A study shows potential for developing container operations at the port–it already handles bulk cargo for steel companies in the region. Whether or not container trade is realistic, talk of eliminating the port authority and developing some of the port property for condominiums could drive out some of the region's last steel manufacturing jobs. We'd be trading short-term construction jobs for the loss of long-term manufacturing jobs.

Port gentrification isn't a new threat to commercial infrastructure development. And the battle in Cleveland isn't the only place business leaders need to take an active role to promote sustainable economic growth and, with it, jobs. But without your solid support and credible arguments, misguided political interests will disable a vital economic engine.

The famous James Bond line implied his rugged character as he ordered his drink "shaken not stirred." In the case of regional politics and logistics infrastructure, we need to be stirring at an early stage because it's much harder to shake things up once the machine starts to gain momentum.

Part of my role, and part of my reason for joining *Inbound Logistics*, is to help identify those issues that need stirring and where we need to shake a little to make sure the supply chains that support our massive economic engine are the best in the world. ■

10TIPS

STEP-BY-STEP SOLUTIONS

by Deborah Catalano Ruriani

Using Social Networking for Logistics

Many companies are tapping into the power of Twitter, LinkedIn, Facebook, and other sites to promote their products and services, talk directly to customers, and educate the industry. If you are ready to delve into the world of Web 2.0, consider these tips, compiled with help from social networking guru Tim Richards, operations manager at States Logistics Services Inc.

1 **Create your presence on the Web.** Before you can engage in social networking, you need to create a profile. LinkedIn is the social networking site of choice for most businesses; Facebook and Plaxo are widely used as well. These sites enable you to search groups and organizations that interest you, and sign up for updates. You can also engage with other users, and post questions or articles.

2 **Scour the Internet for potential providers.** Many service providers display a social networking link on their home page. If you see a Twitter link, for example, sign up to "follow" the company and receive its news and announcements.

3 **Follow suppliers that don't regurgitate press releases.** Companies utilizing social media correctly do not talk in marketing voices. They engage the customer. Follow companies that provide real solutions through anecdotes and case histories rather than shameless self-promotion.

4 **Check out the profiles of leaders in your industry.** The evolution of social networking makes it possible to easily interact with leaders. Take advantage of it. Read their profiles, look at the groups they have joined, see what kind of discussions they participate in. Don't be afraid to jump in.

5 **Sign up for RSS feeds to follow the members of your network.** Using RSS feeds significantly enhances your ability to stay current on important information, whether it's a blog post, news update, or tweet.

6 **Decipher the negative.** Social networking can provide information about a potential partner, but you need to know how to discriminate between posts by a disgruntled former employee and a true negative analysis. Examine criticism and positive comments about a provider or service you are considering.

7 **Engage, don't just watch and listen.** Pick groups on LinkedIn, Facebook, or Plaxo with a strong membership base, and start your own group to frame the conversation around your concerns – negotiating carrier rates or implementing RFID, for example. Collaborate with providers and other shippers.

8 **Get educated.** Do frequent searches on topics that interest you. Set up a time each day to monitor your social networking sites and RSS feeds. Use them as a research tool by posting a discussion and considering the responses.

9 **Attract new logistics personnel.** Looking for logistics help? Social networking sites can connect you to the right individuals. Browse profiles, and post a job listing. Social networking exponentially increases your reach to potential candidates.

10 **Get customer input.** Learn what your company is doing right and wrong by communicating with customers online. You can create a blog where customers can comment on a new logistics procedure, for example. In addition, start a "Become a Fan of" page for your company on Facebook. Ask customers to offer suggestions on how you can improve your service, and solicit feedback on any new procedures or enhancements you offer. Online surveys can be useful as well. ■

READER PROFILE

by Merrill Douglas

RECIPE FOR SUCCESS

NAME: **Scott Kingsley**

TITLE: Logistics manager

COMPANY: The Food Source International, Frazer, Penn., since 2009

PREVIOUS EXPERIENCE: Philadelphia Flyers archives intern, Comcast-Spectacor; account services representative, production planner, Transcontinental Direct; logistics planner/international freight management, Penske Logistics

EDUCATION: B.S., business management and marketing, Pennsylvania State University, 2002

The Personal Connection

Scott Kingsley is as tech-savvy as any young logistics professional. But ask him what technology he couldn't live without, and the answer might surprise you. It's not a logistics management system, or a clever iPhone app. It's the telephone itself.

Personal connection is a basic business value for Kingsley, logistics manager at The Food Source International in Frazer, Penn., and he believes there's nothing like old-fashioned conversation to keep those connections strong.

Sure, you can share data across a computer network, and you can get to know carriers and customers via e-mail. "But it's not the same as chatting for a few minutes about their family or last night's game. That's how you develop great relationships," Kingsley says.

Many of Kingsley's conversations at The Food Source involve transportation from domestic and international suppliers to the company's third-party warehouses, and from the warehouses to customers. The Food Source distributes flavorings and other ingredients, mainly to food manufacturers and processors.

Third-party logistics (3PL) service providers book loads with carriers, but Kingsley negotiates transportation contracts, coordinates the movements, tracks and reports on shipments, and

The Big Questions

What do you do when you're not at work?
I love cycling. I ride in charity races and to stay in shape and push myself. I've gotten my wife into cycling, and she's getting me into running. I also play ice hockey once a week.

Ideal dinner companion?
Eddy Marckx, a Belgian cyclist from the 1970s who may have been more dominant than Lance Armstrong in his prime. I'd love to hear his stories of riding on the Champs Élysée in the Tour de France.

What's in your messenger bag?
My iPhone, Bluetooth, a notebook, industry magazines, a cycling magazine, and some paperwork.

First Web site you look at in the morning?
Weather.com, to see if the weather will affect customer deliveries.

If you didn't work in supply chain management, what would be your dream job?
To open a bike shop or be a professional cyclist.

audits freight charges. He's also responsible for maintaining inventory levels.

He does it all on his own, which wasn't the case in his previous job at Penske Logistics, a 3PL based in Reading, Penn. With support staff there to back him up, it was easier to concentrate on problems when they arose. "I could delegate some responsibilities and focus on investigating the issue," he says. At The Food Source, Kingsley keeps all the balls in the air himself, even when he has to juggle something extra.

To help simplify that juggling act, Kingsley hopes to devise an easier system for retrieving historical data on specific transportation lanes. That data helps him compare past and current transportation charges while allowing for fluctuations in fuel surcharges and seasonal demand.

"For example, arranging reefer truck service out of the south during produce season is more expensive than in non-produce season, when equipment is more readily available," he says.

Kingsley also hopes to continue forging close, productive ties with his service partners, suppliers, and customers. He relishes connections like the one he made when his contact at a supplier asked about his plans for the weekend. Kingsley said he'd be cycling in an event to raise money for the National Multiple Sclerosis (MS) Society.

"She said, 'Wow, that's amazing! I have MS,'" Kingsley says. "I was glad to have someone specific to ride for."

Encounters like those make Kingsley's job especially satisfying. "I meet so many people and hear their stories," he says. "Sometimes I'm able to touch people's lives, whether it's through a charity event, or just letting them know a shipment they need will arrive on time." ■

d@ta point

U.S. intermodal traffic was up 2.5 percent in December 2009, compared to December 2008.

— Association of American Railroads

UP THE CHAIN

Diversified industrial company **Ingersoll-Rand** has tapped **Todd Wyman** to serve as senior vice president, global operations and integrated supply chain. In this new role, Wyman will develop and implement long-range strategies to optimize manufacturing operations, leverage I-R's globally integrated supply chain, and transform how the company uses assets across the enterprise.

Taylor Robinson joins **Northern Power Systems**, a next-generation wind turbine company, as vice president of global supply chain. His experience will help the company manage and expand the supply chain for a new turbine designed and marketed toward the community wind market, as well as grow the company's roster of supply chain partners.

Packaging solutions company **MeadWestvaco** has named **Nik Hiremath** vice president, supply chain. In this position, Hiremath will lead the company's global supply chain functions, including sourcing, logistics, distribution, and transportation. He previously served as vice president, procurement and supply management for MeadWestvaco's consumer and office products division.

KBR, a global engineering, construction, and services company, has appointed **Colin Elliott** president of its Infrastructure and Minerals (I&M) business unit. Elliott will ensure that the I&M operation, created in late 2009 to strengthen the company's position in that sector, provides global focus and leadership in four key markets: water, transport, facilities, and minerals.

m&a

Saddle Creek Corporation has acquired **ServiceCraft Logistics** to bring more integrated solutions to new markets and provide customers with expanded coverage and service options. The 3PL gains eight warehouse locations and increases its total managed square footage by more than 20 percent.

ASL Distribution Services has acquired the assets of **Professional Distribution Services**, a packaging, warehousing, freight, and logistics services business. The strategic agreement gives customers more service choices, locations, and coverage.

Tyden Group has added **E.J. Brooks Company** to its business portfolio. The union of the two global security seal companies, now called Tyden Brooks Security Products Group, provides customers with a broader product portfolio and access to a global sales and service network.

GXS and **Inovis**, providers of business-to-business e-commerce services and supply chain software solutions, have signed a definitive agreement to merge. The move gives customers increased network scale and efficiency, expansive global reach, and an extensible services-based architecture.

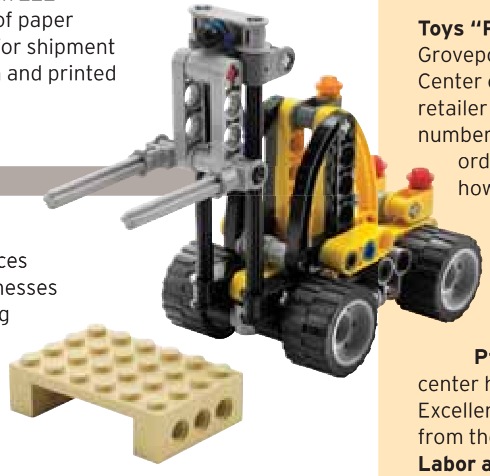
GREEN SEEDS

CSX Transportation has unveiled two ultra-low-emission GenSet locomotives that will operate full time in its Avon, Ind., yard. The railroad is the first in the state to utilize these green locomotives, which can reduce nitrous oxide and particulate matter emissions by 80 percent and carbon dioxide emissions by up to 50 percent.

LeanLogistics has introduced its GreenLanes transportation and freight optimization program to help shippers and carriers improve sustainability and reduce empty miles across the United States. The new offering goes beyond traditional freight consolidation, allowing users to identify and predict opportunities for lane and load optimization, making the best use of available assets, which, in turn, reduces carbon footprint.

INTTRA has developed green calculators to demonstrate the money, time, and trees companies can save by switching from manual, paper-driven processes to electronic commerce. The company's electronic commerce platform, which handles 10 percent of global container transactions, potentially saves more than 222 million sheets of paper used annually for shipment documentation and printed messages.

SEALED DEALS



Sonoco, a diversified global packaging company, has entered into an agreement to supply packaging services for **The LEGO Group** in North America. The two businesses first began working together in 2006, and the existing contract has been expanded to include other retail products and new product launches, as well as packaging for LEGO's consumer online brick-ordering service. Sonoco delivers these offerings from a new pack center in Monterrey, Mexico.

Tractor Supply Company, the largest retail farm and ranch store chain in the United States, has completed implementation of **ClearTrack**'s Global Logistics Management suite. The agreement provides shipment visibility, approval to ship notification, and performance measurement for all international inbound transportation activities.

awards

Toys "R" Us presented **Exel's** Groveport, Ohio, facility its Fulfillment Center of the Year award. The toy retailer evaluates partners on a number of criteria including "perfect orders," an overall measure of how often customers received the right products at the right times, order-fill and inventory accuracy, and shipping efficiency.

Pfizer's Memphis logistics center has received the Award of Excellence for Workplace Safety from the **Tennessee Department of Labor and Workforce Development**. The facility, which employs 200 people, qualified for the award by logging more than 512,000 hours without any lost time or injuries.

TRENDS

CG Railway offers sailings every four days from Coatzacoalcos, Mexico, to Mobile, Ala., ferrying as many as 115 standard railcars on its double decks.

Gauging the Future of Marine Rail

by Joseph O'Reilly

Rail intermodal solutions have become an important component of the U.S. supply chain as capacity, cost, and sustainability concerns warrant more transportation flexibility. The hitch for shippers is the time it takes to re-handle cargo, switch modes, and turn assets and inventory. Rail intermodal requires better forecasts, greater visibility, and control of product farther upstream in the supply chain.

Combining the advantages of short-sea shipping and rail offers a seamless transition between modes, quicker turns, and less buffer inventory. But train ferries have yet to make the same impact in the United States as they have elsewhere around the world. Now that tide is turning–fast.

As the U.S railroad industry welcomes new interest from non-traditional shippers, some regional shortlines are making a play to introduce intermodal shippers to marine rail solutions. One example is Mobile, Ala.-based CG Railway, which has found a captive audience moving freight between the United States and Canada and Mexico's industrial areas.

Operating two vessels, CG Railway offers sailings every four days from Coatzacoalcos,

CONTINUED FROM PAGE 22

Mexico, to Mobile, ferrying as many as 115 standard railcars on its double decks.

Inbound Logistics recently tracked down Kevin Wild, senior vice president of CG Railway, to discuss the emergence of marine rail and how shippers are capitalizing on its value.

> "Using marine rail, shippers reduce lead times, inventory levels, and private railcar fleets because the service provides a continuous flow of product. The faster transit results in **three times more turns** on equipment."
>
> **–Kevin Wild,** *senior vice president, CG Railway*

Q: Why aren't there more marine rail services in the United States?

A: Marine rail service is a niche market. For international business, the operation can only run locations where the rail gauge is identical to the United States. This limits service providers and shippers to Mexico and Cuba. For U.S. domestic business, Jones Act regulations and imposed harbor fees put marine rail at a disadvantage compared to the pure land route.

Marine rail service may not be a solution in all situations, but can be effective in some areas. One key issue is spreading the word and making shippers aware of its advantages.

Q: What industries and cargo are best served by marine rail service?

A: Marine rail can carry bulk, packaged, and liquid shipments. It can handle any cargo in any type of railcar. Traditional volumes are well balanced between boxcars, hoppers, and tank cars and we have moved project cargo on flatbeds and double-stack containers in well cars.

Q: What are the advantages of shipping with a marine railroad?

A: The combination of rail and marine services presents an opportunity to help companies reach their "green" objectives. Fast transit and through billing allow us to compete against truck traffic, which helps reduce over-the-road congestion.

NAFTA trade is a large market and continues to grow. Our service provides an alternative route to traditional land crossings, opening another border between Mobile and Coatzacoalcos.

Marine rail shippers benefit from a consistent service that provides fast transit, efficient equipment use, and a continuous pipeline solution capable of meeting supply chain needs. The mode combination provides the ability to load a large volume of cargo, with no rehandling and close to just-in-time delivery.

Shippers have been able to reduce lead times, inventory levels, and private railcar fleets because the service provides a continuous flow of product. The faster transit results in three times more turns on equipment.

Combining rail/intermodal transport with short-sea shipping allows companies to reap the benefits of mixing modes without impeding continuous flow.

Q: How have other railroads received the service? How are you working with them to enhance it?

A: Target markets are east of the Mississippi River and Mexico City and in the South. Calling on the Port of Mobile provides direct interchange to five Class I railroads and the Alabama Gulf Coast Railroad. These rail interchanges offer complete coverage of the target markets.

Because the three Class I's (Canadian National, Norfolk Southern, and CSX) do not go west of the Mississippi River, our interchanges are balanced. The railroads recognize that this alternative provides joint customers with unique advantages and they, too, are able to speed transit and improve equipment use.

Marine rail service allows companies to compete in markets that in the past were not reachable because of long transits, high inventory costs, and/or high freight rates. In more than a few situations, an industry located in the southeastern United States now has consistent monthly volume, which did not exist before, to a consignee in southern Mexico. The same is true for Mexican suppliers to U.S. customers.

Because we are a railroad and subscribe to car hire and interchange rules, and participate in the railroads' interline settlement systems, the Class I's, as well as our customers, follow the same guidelines as if the car were traveling via rail throughout the entire transportation move.


Alaska Air Cargo

CONTINUED FROM PAGE 24

U.S. Roads: The Good, the Bad, and the Puddly

For Alaskan shippers, the road less traveled is a good thing. The 50th state ranks dead last in the Reason Foundation's *18th Annual Highway Report*, which scorecards state highway systems in 11 categories including congestion, pavement condition, fatalities, deficient bridges, and total spending. The study is based on information that each state reported for 2007.

While the Last Frontier has to battle Mother Nature's caprice and sheer isolation, the U.S. Northeast has fewer excuses. New York, New Jersey, Rhode Island, and Massachusetts are among the worst-performing highway systems in the nation. California's roads are also worse for the wear, ranking 48th among all states.

At the other end of the spectrum, the Great Plains states sweep the competition with seven of the best highway systems. Top-ranked North Dakota, which has had the best performing system each year since 2001, scored well by having the least interstate and rural mileage in poor condition and ranking first in maintenance spending. New Mexico, 27th in 2000, now ranks second in overall performance and cost-effectiveness. Kansas is third overall, followed by South Carolina and Montana.

"This year's report shows the difficulties that many states face when making across-the-board progress in road conditions," says David Hartgen, lead author of the highway report and senior fellow at the Reason Foundation. "In many cases, we see two steps forward, one step back. We saw improvement in five key categories in 2007, but also found that more than 25 percent of the nation's bridges are rated deficient. Urban interstate conditions are worsening again. And real progress in reducing urban congestion has slowed to a crawl."

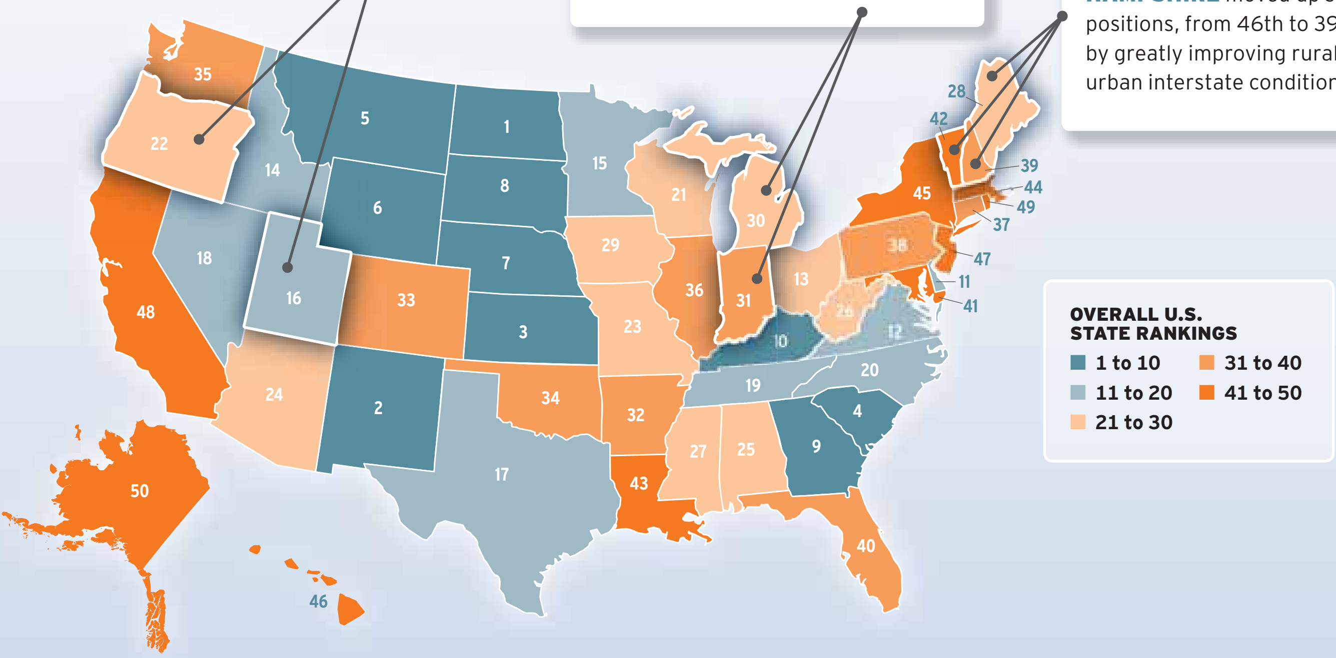
Keeping Up With the Competition

North Dakota took the top spot for the 10th year running, while Alaska appropriately finished 50th in the Reason Foundation's *18th Annual Highway Report*, which ranks U.S. states' road infrastructure. But infrastructure problems don't necessarily enjoy company. Some states are making great strides improving highway systems while their neighbors are falling short.

▲**UTAH** improved 9 positions, from 25th to 16th, by reducing the mileage of poor urban interstate. ▼**OREGON** slipped 11 slots, from 11th to 22nd, due to a recalculation of state-controlled mileage.

▲**MICHIGAN** moved up 12 positions, from 42nd to 30th, reporting a large improvement in rural pavement condition. ▼**INDIANA** fell 16 positions, from 15th to 31st, due to a sharp increase in disbursements per mile and a dramatic decline in urban interstate condition.

▼**VERMONT** slipped 12 positions, from 30th to 42nd, with a large increase in poor rural and urban interstate mileage. ▼**MAINE** fell 6 slots, from 22nd to 28th, due to an increase in deficient bridges and worsened condition of rural arterials. ▲**NEW HAMPSHIRE** moved up seven positions, from 46th to 39th, by greatly improving rural and urban interstate conditions.



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5 Supply Chain Trends for '10

Looking to the future, Brad Mitchell, president of distribution and logistics for UPS, offers advice for dealing with five developments on 2010's horizon.

1 Security will be a top supply chain focus: Issues such as theft and counterfeiting are always on the radar for companies that manufacture high-value products and equipment, especially in a down economy. Businesses can expect security to be just as important in 2010, driven by continued economic challenges and factors such as globalization, which lengthens the supply chain and creates more opportunities for breaches.

Companies should ensure that they have full visibility across the supply chain to know where products are at all times and build in protective measures such as system redundancy and strategies for reducing hand-offs.

2 All "green" eyes will be watching Washington: Any doubts whether green supply chains matter will be wiped away in the coming year. Industry is preparing for a future where sustainability will rank high on government and consumer agendas.

Companies anticipate green legislation out of Washington in 2010, so now is the time to prepare. Supply chains play a significant role in the "greening" of a company. How companies get their products to market, and their decisions about whether to invest in/build infrastructure or leverage existing assets, can have a large impact on the environment.

3 Outsourcing will be in—in a new way: Companies across industry have long realized the benefits of divesting logistics functions, from supply chain design to warehousing and distribution. In 2009, more companies turned to outsourcing to free up working capital and focus on core capabilities that drive sales. Industries that have been slower to embrace the idea–notably healthcare–reached new levels of proficiency.

In 2010, expect outsourcing to be in as a key supply chain strategy to help companies increase flexibility while focusing internal resources on core business areas.

4 Doing more with less will continue as the new normal: Even as economic conditions improve, companies will continue to maintain the lower-cost structure they've put in place over the past 18 months as part of a focus on doing more with less.

At the same time, companies will be looking for new growth opportunities, which requires flexibility across the supply chain. Flexible supply chains that allow for business growth and low costs do not have to be an either/or choice. Companies can achieve both by taking advantage of external assets, such as multi-client distribution centers operated by third-party logistics providers, which allow them to share distribution space with others. By sharing facilities, companies don't have to invest in storage space all year when they may only need full capacity during select months.

This is just one example of doing more with less. Others include adopting multi-modal transportation strategies to ensure that shippers have the right mode in place to get the right products to market efficiently and cost-effectively; and redesigning the supply chain to ensure the most effective sourcing and distribution strategies.

5 Companies will take a vested interest in vested outsourcing: Market experts have noted a new trend emerging where more companies are looking to structure relationships with suppliers based on a system of shared risks and rewards when executing supply chain services. In short, companies pay for outcomes rather than specific tasks.

Known as "vested outsourcing," this strategy is not appropriate for every third-party partnership, but when implemented under the right circumstances, it can result in a win-win proposition for both parties.

The key to making vested outsourcing relationships work is collaboration. It's crucial that companies and their vendors, suppliers, and service providers work closely together to establish appropriate goals based on business objectives, then create realistic and measurable supply chain outcomes that will advance these goals.


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The Big Box Rebound

If import container volume is any indication, the U.S. retail industry and economy may be on the mend. After more than two and a half years of year-over-year declines, import cargo volume at the nation's major retail container ports is expected to see three straight months of gains in early 2010, according to the monthly *Port Tracker* report by the National Retail Federation (NRF) and IHS Global Insight.

"We've been seeing hints of a turnaround in our past few reports, but this is starting to look like a clear trend," says Jonathan Gold, vice president for supply chain and customs policy, NRF. "If retailers are starting to import more merchandise, it's because they expect to be able to sell more. That's a good sign for our industry and the overall economy."

January 2010 is forecast at 1.02 million TEUs, down four percent from the previous year.

This figure would mark the 31st month of year-over-year declines, but NRF and IHS expect that trend to reverse in February, with container volumes reflecting a modest 16-percent increase over February 2009. March and April volumes are also tracking positively.

"The second half of 2009 has seen an improvement with 'less bad' year-over-year numbers compared to the first half," adds IHS Global Insight Economist Paul Bingham. "While improving, import container traffic is projected to be weak through March due to the traditional slow season combined with the weak pace of economic recovery."

Envisioning Zero Emission Tractors

In the latest green ground development, FedEx Freight is partnering with Vision Industries, Santa Monica, Calif., producers of the zero emission plug-in electric/hydrogen fuel cell hybrid Tyrano truck, to test drive a new tractor for its heavy-duty truck fleet.

The partnership comes as the public and private sectors look to reduce the number of short-haul diesel trucks on the road, particularly around congested cargo hubs. The Ports of Los Angeles and Long Beach's Clean Truck Program, which offers incentives for replacing carbon emissions-spewing diesel trucks and keeping low-cost hydrogen close by and readily available, has given Vision's quest a boost.

With FedEx Freight now in tow, widespread use of hydrogen/electric trucking fleets is imminent. The Tyrano heavy-duty Class 8 truck is 35 percent cheaper to operate than current diesel-powered trucks and 50 percent cheaper than liquefied natural gas. Its hydrogen/electric drive system has approximately 400 horsepower and 3,200 foot/pounds of torque, almost doubling the pulling power of a conventional diesel truck.

As part of the agreement with FedEx Freight, Vision Industries will configure a tractor with its hydrogen/electric hybrid drive train and test the vehicle over the next year in different operations to evaluate its operational sustainability.

Clorox Cleans Up

The Clorox Company is in spin cycle as it lightens its load. The Oakland, Calif., manufacturer recently announced that it would stop using chlorine gas in its signature bleach product because of growing concerns over the safety and oversight of transporting the product via rail.

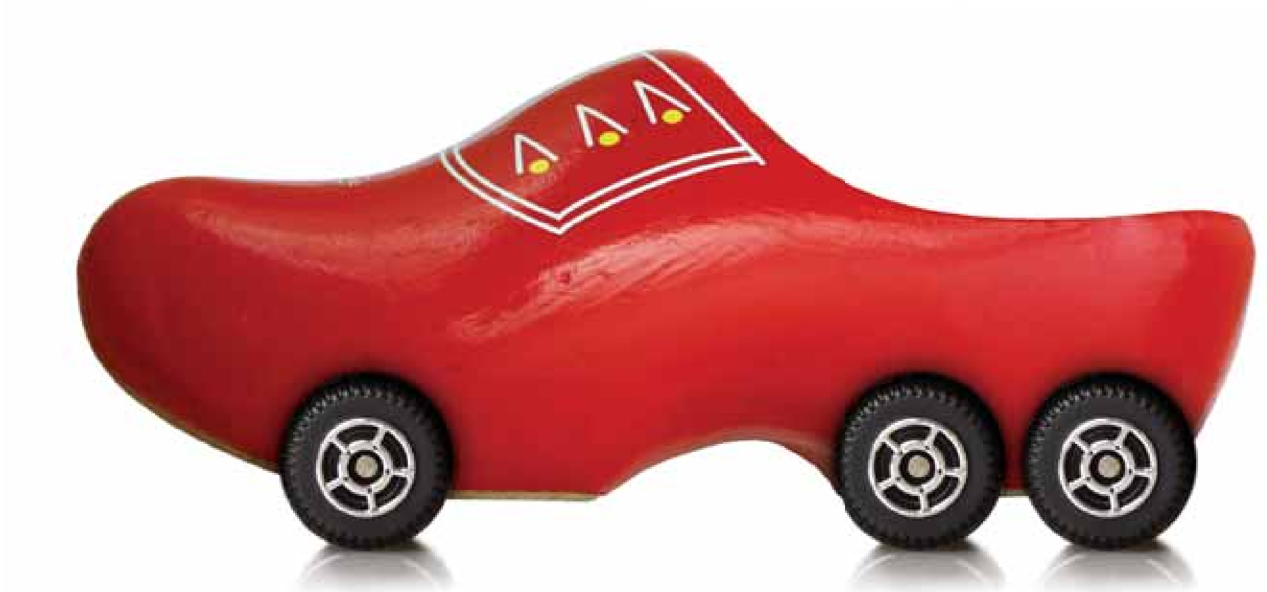
Clorox will phase in a switch from chlorine gas to other chemicals in its bleach at its Fairfield, Calif., factory over the next six months and at other sites in coming years.

Chlorine shipments have come under scrutiny in recent years following fatal rail accidents where chlorine gas was released.

Clorox's conversion also follows the U.S. House of Representative's recent ratification of the Chemical and Water Security Act of 2009, which gives government greater latitude to force companies that use dangerous chemicals–often targets of terrorism–into considering safer alternatives.

Still, lobbyists for the chemical industry–notably DuPont and Dow–oppose the legislation, cautioning that government efforts to mandate chemicals used in manufacturing processes could lead to product shortages. ■

by Joseph O'Reilly



Dutch Centrism: If the Clog Fits...

Given its accessible location and proximity to two of the world's great port cities–Amsterdam and Rotterdam–the Netherlands has historically been a center of commerce and trade.

A new study, *High Quality, Competitive Costs: Benchmarking the Netherlands as a Gateway to Europe*, suggests the country's reputation for cargo distribution–in terms of cost, quality, and supply chain sustainability–remains intact. The report, prepared by the Holland International Distribution Council and partners Buck Consultants International and Ernst & Young, explores different European logistics hot spots and compares their site selection appeal for distribution center operations.

Because of the Netherlands' position as a gateway to Europe, and the large volume of intercontinental sea and air freight into the country, transport tariffs are generally competitive, notes the report. The Netherlands is also a leader in Europe in terms of labor flexibility–crucial for scaling logistics operations–and its tax and customs authorities are among the most efficient in the world.

Mode accessibility and centrality to Europe's consumer populations make the country an ideal location for sustainable development, the report suggests.

But what the study doesn't overtly acknowledge is the looming specter of congestion in and around the Netherlands' biggest cities, one of Europe's most densely populated areas. Efforts to "green" industry and commerce are magnified, making sustainable development a necessary target for further growth.

Traffic has become such a problem that the Dutch cabinet recently passed legislation to tax drivers by the miles they drive, akin to plans discussed and debated in North Carolina, Oregon, Massachusetts, and Texas,

CONTINUED FROM PAGE 32

among others. Nearby countries facing similar issues–notably Germany and Belgium–will likely keep a close watch on how these proceedings develop.

The government expects to implement the tax in 2012, with a goal of eventually cutting traffic jams in the country by 50 percent. All revenue would go toward improving road and rail infrastructure.

Critics of the tariff suggest authorities would be better served investing more time and capital into building better linkages between roadway systems to alleviate congestion.

Regardless of how the proposal pans out, global businesses will be exploring opportunities to leverage the country's transportation and logistics assets and location; and U.S. and European authorities will wait and see how the Dutch strategy for reducing congestion and carbon emissions comes to pass.

Hong Kong Builds for the Future

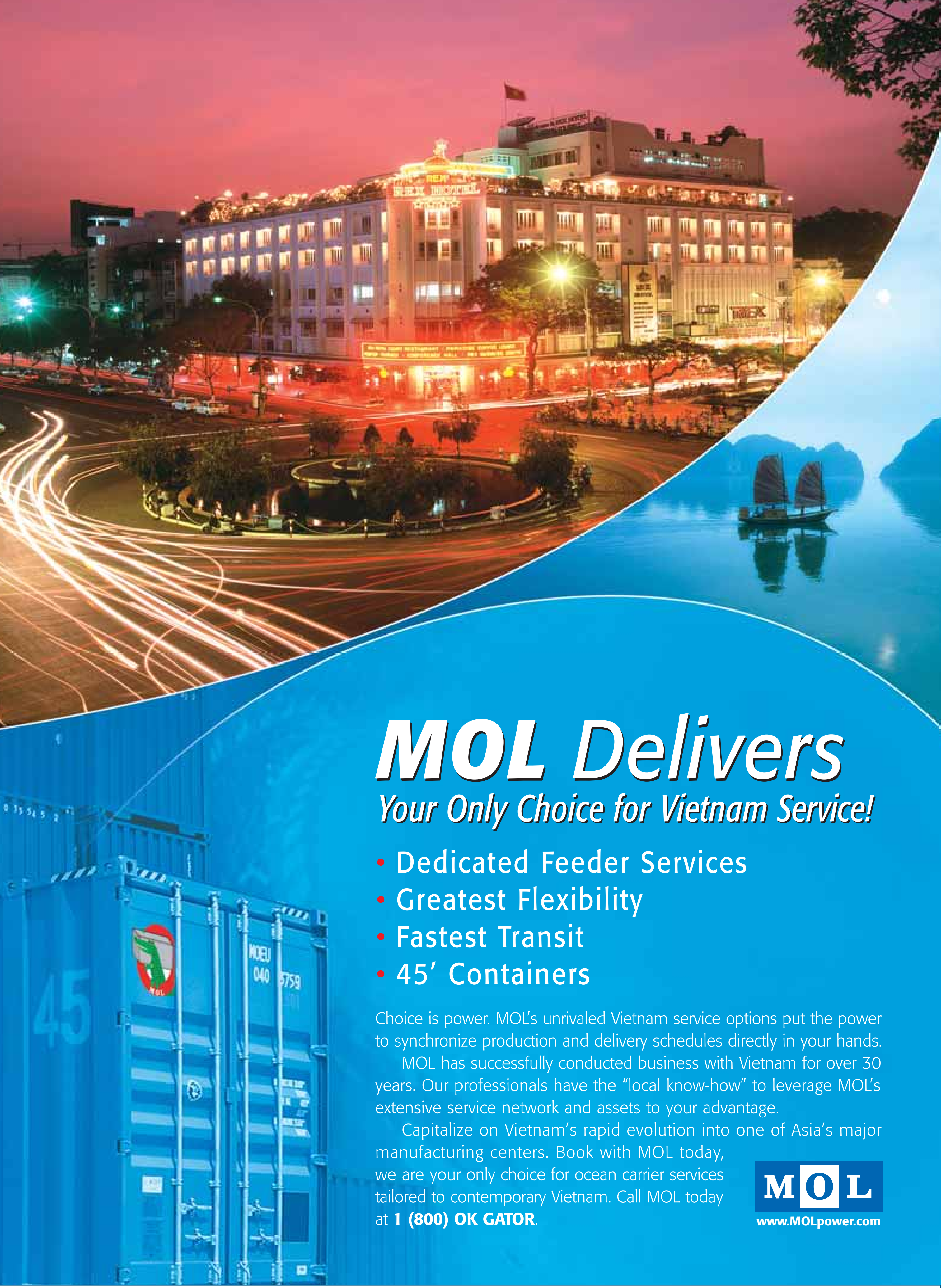
When it comes to committing resources to logistics infrastructure projects, Hong Kong's government is king. Speaking at the *International Intermodal and Its Domestic Connections* seminar in Chicago recently, Donald Tong, Hong Kong Commissioner for Economic and Trade Affairs, USA, documented how the region is working on 10 major infrastructure projects that will tap its economic development potential.

The logistics sector currently contributes to five percent of Hong Kong's GDP and provides about 210,000 jobs. "The various projects, many directly related to the transport industry, are expected to add $12.8 billion in value to our economy and create about 250,000 new jobs," he explains.

One notable project is the 18-mile Hong Kong-Zhuhai-Macao Bridge. The bridge is expected to open by 2016, at an estimated cost of $5 billion, and will trim the travel time from Zhuhai to the Hong Kong International Airport from four hours to 30 minutes, significantly reducing transportation costs.

The bridge would also open up the Western Pearl River Delta consumer markets for cargo, Tong points out, as a 50-million consumer base comes within a three-hour commuting radius of Hong Kong.

These developments augur even greater potential for U.S. and global businesses exploring new opportunities to penetrate the Asian market.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United States, Japan Air it Out

There has been a lot of rumor and speculation about Japan Airlines International's (JAL) fate of late, including a bankruptcy filing and a possible alliance with a major U.S. air carrier.

Regardless, Japan and the United States are on the precipice of another major deal – a landmark agreement to relax limits on flights between the two countries. Such a compromise would open up more opportunities for widespread cross-border airline alliances and more options for airfreight shippers.

A recent pact, still to be finalized by both governments, would authorize airlines from the two countries to select routes and destinations based on consumer demand for both passenger and cargo services. This would preclude limitations on the number or frequency of flights U.S. and Japanese carriers can operate.

The agreement would also remove restrictions on capacity and pricing, and provide unlimited opportunities for cooperative marketing arrangements between U.S. and Japanese carriers.

Delta and United Airlines are already allowed to serve Japanese cities, and Delta's acquisition of Northwest Airlines increased its presence in Asia. But U.S. passenger airlines have been limited in the routes and number of flights they can operate to Japan.

The U.S.-Japan agreement would likely also prompt Japan Airlines to seek a joint venture with a U.S. carrier, and there is no shortage of willing suitors. This would allow airlines to share costs and revenues on certain flights regardless of which airline owns or flies the aircraft.

Werner Digs in Down Under

Omaha-based Werner Enterprises recently announced the startup of a subsidiary that will expand its presence all over Down Under. Werner Global Logistics Australia brings the company's portfolio of forwarding, logistics, and transportation services to the country's domestic market, notably populated areas such as Melbourne, Sydney, and Brisbane.

The trend of globe-trotting U.S. motor freight carriers exploring markets to grow into is firmly entrenched, and Werner is among the latest carriers to follow demand offshore.

"Our expansion into Australia was driven in part by customers' needs for our services – and more specifically to implement our global transportation management system and integrate their supply chains from U.S. manufacturing origins to customer locations throughout Australia," says Derek Leathers, chief operating officer of Werner Enterprises and president of Werner Global Logistics.

As consumerism and freight volumes in the United States dried up during the past year and a half, the opportunity to tap a more promising market, largely insulated from the global recession, is timely. Australia's economy has weathered the downturn better than most developed countries and its housing market is on solid ground, recording double-digit growth in 2009. The construction and building materials industry is one key sector that will feed demand in Werner's new network.

The motor freight carrier also has an established presence in Asia that dovetails with its Australia move. In 2007, Werner set up shop in Shanghai and became one of the first U.S. companies to operate as a wholly owned foreign entity in logistics, trading, warehousing, and NVOCC services under China's strict regulations. Now Werner can service shippers' door-to-door needs between the two continents.

For U.S. companies importing and exporting freight to and from Australia, the benefits are equally transparent.

"The subsidiary provides U.S. shippers with a single company and local operations at both ends of the supply chain – in the United States and in Australia. This allows them to improve shipment visibility and more effectively implement supply chain enhancements," adds Leathers.

Werner Enterprise's venture into the Australian market is the latest example of U.S. trucking companies exploring growth opportunities offshore.

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Heavy Heavy Fuel

When heavy manufacturing brings the hammer down on global policy makers, they mean business. Recently, a group of the world's leading heavy-duty vehicle and engine manufacturing companies urged government authorities in Europe, the United States, and Japan to standardize fuel-efficiency measurement metrics, methodologies, and regulations.

Meeting in Brussels, executives from Daimler, Isuzu, Mitsubishi Fuso, Navistar, Nissan Diesel, Scania, and Volvo, among others, shared and discussed concerns including climate change, global energy security, air quality-related emissions standards, improved fuel quality, and renewable fuels.

The manufacturers agreed to actively encourage global policy cooperation and offer their mutual expertise to ensure that regulatory developments enhance and expand the industry's technological progress–within realistic time and economic constraints.

"A coordinated global approach for our industry is the most effective way to contribute to achieving global fuel efficiency improvements from the road freight sector," explains Leif Östling, CEO of Sweden-based Scania, and a chairman of the European Automobile Manufacturers Association, which hosted the meeting. "We serve a global marketplace, and want to avoid conflicting regulations from different regions. That is simply too costly, and impedes technological progress."

The group of executives discussed how the global harmonization of technical standards affecting heavy-duty engines and vehicles might further improve environmental performance and motor freight movement efficiency. Among the key topics addressed at the meeting were:

- Ongoing activities in Japan, the United States, and the European Union to enhance the fuel efficiency of heavy-duty vehicles.
- Progress in developing a globally accepted method for the certification of heavy-duty hybrid electric vehicles.
- The application of computer simulations to evaluate fuel efficiency among diverse commercial vehicle configurations.
- The positive outcome of the United Nations Economic Commission for Europe's efforts in establishing a global technical regulation for gaseous emissions testing of heavy-duty engines.

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DB Schenker Rail's stake in Italian rail freight operator NordCargo will pay dividends as Italy's logistics industry develops.

An Italian Renaissance

DB Schenker Rail recently increased its stake of ownership in Italian rail freight operator NordCargo, bringing its total share in the company to 60 percent. Perhaps more telling is the context of the German railroad's investment.

Italy is one of DB Schenker Rail's most important foreign markets, with transportation to and from the country accounting for roughly one-quarter of the company's total international revenues in 2008. NordCargo is licensed to operate on the Italian rail network, and runs 7,000 trains and 900,000 train miles per year. It is also responsible for providing traction on international routes along the Adriatic and Tyrrhenian coasts between Milan and Naples.

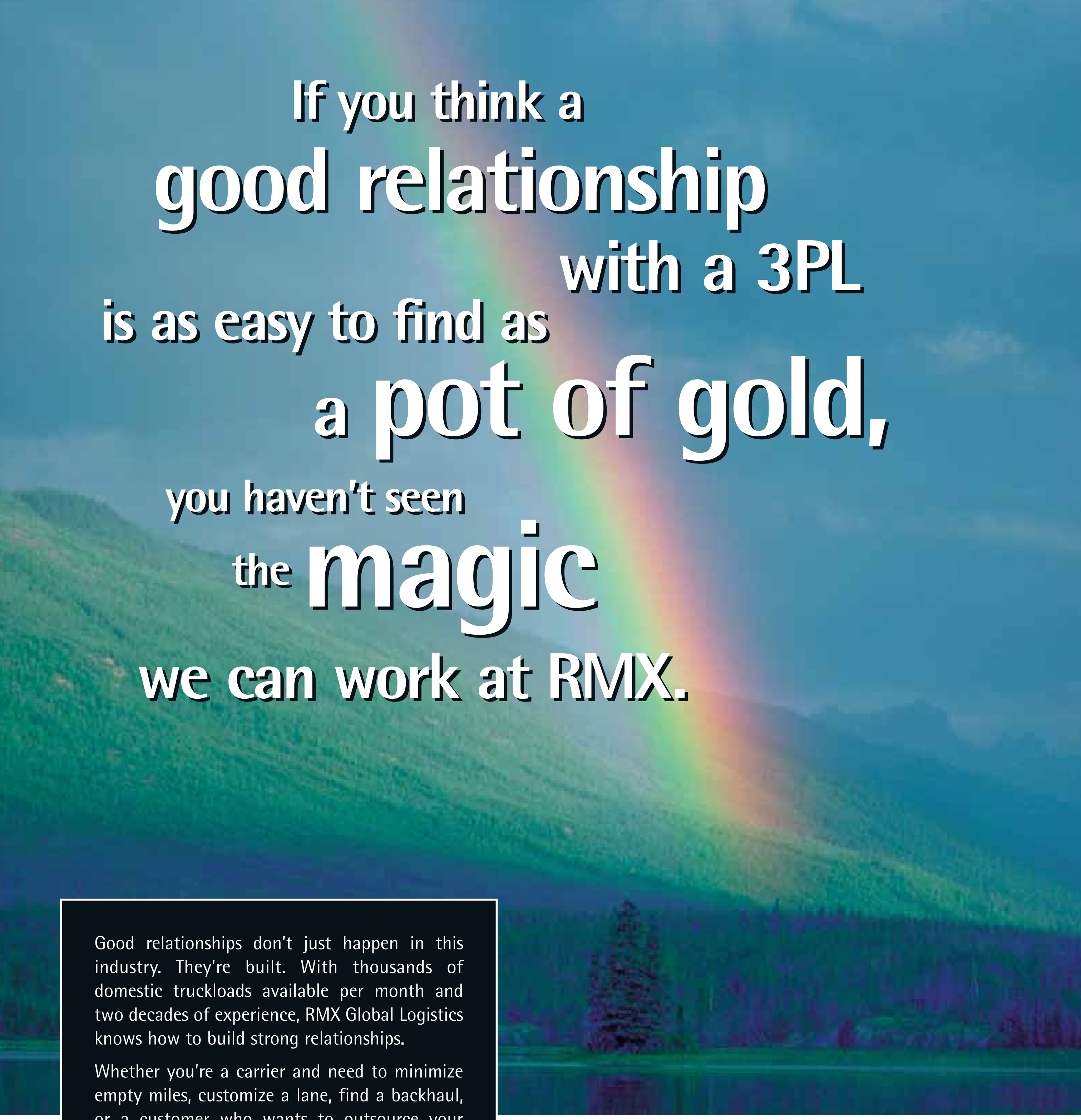
Off track, the Italian port of Gioia Tauro continues to emerge as an important regional hub for cargo transiting the Suez Canal. Situated on Italy's instep, bordering the Tyrrhenian Sea, the port ranks fifth in Europe and 28th in the world in container traffic, ferrying 3.5 million TEUs a year.

Once a laggard in logistics development, the Italian government has now made it a cornerstone industry for turning around its economy. And more freight is expected to come through the country's pipeline. When Switzerland's AlpTransit Gotthard Tunnel is completed later this decade, a new stream of commerce will cross directly through Milan, creating an important trade corridor between Asia, the Middle East, and Europe.

This potential makes DB Schenker Rail's continued investment that much more significant.

Its current business unit, DB Schenker Rail Italia, which was purchased in 2004, will be transferred to NordCargo and the activities of both companies merged under its umbrella.

Speaking to this integration of business activities, DB Schenker Rail Chairman Alexander Hedderich explains that the company expects to improve its product portfolio in Italy and along the north-southbound corridors, thus laying the basis for attracting more transport onto rail in both the international and Italian domestic markets.



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Red Sea Rolls

On the other side of the Suez divide, the completion of the first phase of Jeddah Islamic Port's newest container facility, the Red Sea Gateway Terminal, is parting the waves for more traffic between Asia and Europe.

Located at the northern end of the Jeddah Islamic Port, work at the $2–billion, 1.8 million-TEU container terminal commenced in January 2008 and is expected to be fully complete later in 2010.

It's a big play for Saudi Arabia and shippers moving cargo through the Suez lane–where traffic has spiked considerably during the Panama Canal's own expansion phase and as manufacturing activity in India and Western China continues to grow.

The Jeddah Islamic Port is considered a natural gateway and transshipment hub due to its strategic location in the center of the Asia-Middle East-Europe route. Nearly 73 percent of total container throughput in Saudi Arabia passes through its gates. The Red Sea Gateway Terminal will increase capacity by 45 percent.

"The port efficiency and canal capacity are clearly going to be a game-definer in the container terminal industry," states Lye Seng Tan, COO, Red Sea Gateway Terminal. "Terminals will have to allow for the newer super-size 13,000-TEU container vessels that require deeper drafts to transport the maximum amount of goods in the most efficient and safe manner."

RED SEA GATEWAY TERMINAL UP CLOSE

FACILITIES	
Container Handling Capacity (TEUs)	**1.5 million**
Crane Moves per Hour	**35**
INFRASTRUCTURE	
Total Number of Berths	**3**
Total Quay Length	**3,428 feet**
Main Quay Berth Length	**2,411 feet**
Feeder Berth Length	**1,040 feet**
Storage Area	**400K sq. mi.**
Along side depth (m)	**59 feet**
EQUIPMENT	
Quay Cranes	**B Super Post Panamax**
Rubber Tired Gantries	**26**

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Top 10 Freest Places for Business

The world's freest economies do a better job of protecting the environment and building wealth for their citizens, according to *The 16th-annual Index of Economic Freedom*, released by The Heritage Foundation and the *Wall Street Journal*. This has a positive effect on economic development: freer economies create more trade, trade creates opportunity and wealth, in turn, driving a more favorable climate for businesses locating manufacturing, transportation, and logistics facilities.

The average economic freedom score for the 2010 *Index* slipped 0.1 percent versus the previous year to 59.4 (on a scale in which 100 represents the ideal).

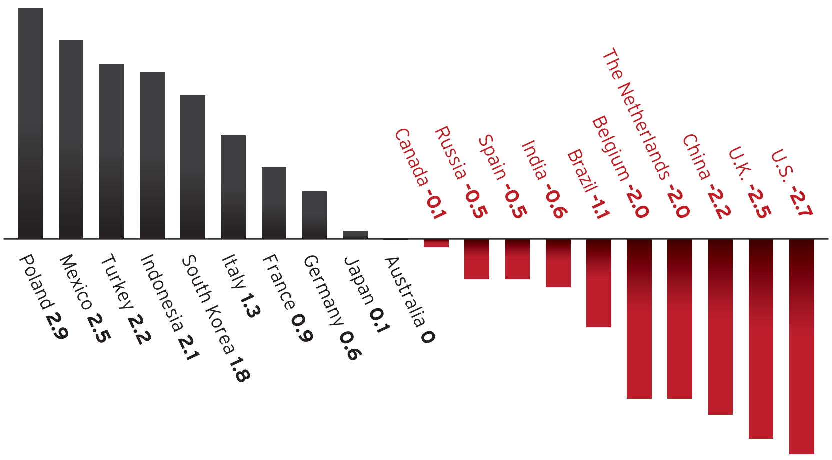
Despite economic difficulties, many countries held true to principles of economic freedom, the report notes. Nearly half of the countries ranked improved overall economic scores this year. Countries whose scores have dropped responded to the economic crisis with policies that assault economic freedom, intended or not. The United States, for example, adopted more intrusive regulations, government takeovers, subsidies and bailouts of private firms, loose monetary policy tax increases, and protectionist trade measures. As a result, the U.S. ranking slipped 2.7 points from 80.7 in 2009 to 78 this year. ■

Top 10 Freest Economies

1. Hong Kong
2. Singapore
3. Australia
4. New Zealand
5. Ireland
6. Switzerland
7. Canada
8. United States
9. Denmark
10. Chile

One-Year Changes in Index of Economic Freedom Scores for the 20 Largest Economies

The 2010 *Index of Economic Freedom* ranks global countries on 10 measures of economic openness, regulatory efficiency, rule of law, and competitiveness. In light of the global economic meltdown, many advanced economies stepped up spending to promote growth and employment. Early evidence, however, suggests this spending has not yet improved economic crisis performance. Notably, Poland and Mexico have shown progress, while the United Kingdom and the United States lag.



Source: Terry Miller and Kim R. Holmes, 2010 Index of Economic Freedom (Washington, D.C.: The Heritage Foundation and Dow Jones & Company, 2010). For more information: www.heritage.org

On Top of the Developing World

When it comes to logistics movers and shakers in developing countries, China and India are at the top, according to a new World Bank Group survey. The annual report, *Connecting to Compete 2010: Trade Logistics in the Global Economy*, analyzes how economies compare in terms of their capacity to move goods and connect manufacturers and consumers with global markets.

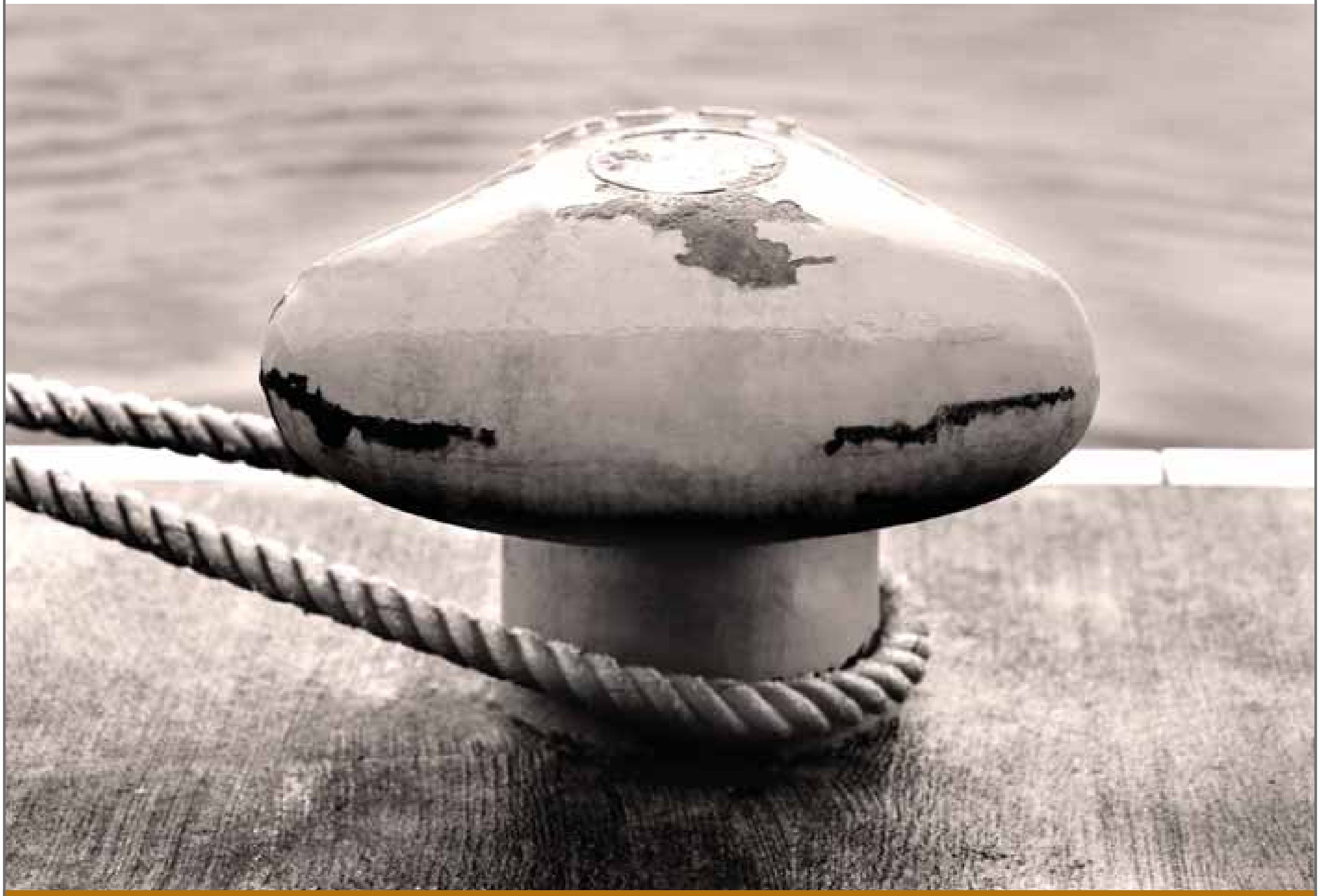
China and India rank first in East Asia and South Asia, respectively, while South Africa (Africa), Poland (Central and Eastern Europe), Brazil (Latin America), and Lebanon (Middle East) command their regions.

The study indicates that logistics performance among developing economies transcends the level of per-capita income. For example, the 10 most significant over-performers include China, India, Uganda, Vietnam, Thailand, the Philippines, and South Africa.

Commenting on the improvement of trade logistics around the world, the survey suggests that countries need to spur faster economic growth and help companies benefit from trade recovery.

"Economic competitiveness is relentlessly driving countries to strengthen performance, and improving trade logistics is a smart way to deliver more efficiencies, lower costs, and economic growth," says World Bank Group President Robert B. Zoellick.

Although the study shows a substantial gap between wealthy and developing countries, it finds positive trends in some areas essential to logistics performance and trade, including customs modernization, use of information technology, and development of private logistics services.



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By Jerry DeMeuse
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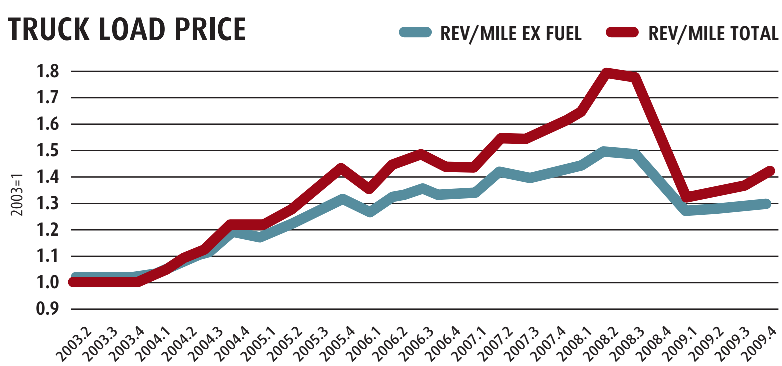
It's Time to Start Looking at the Future and Preparing for the Long Haul

The challenges of the current economy and the availability of capacity have driven truckload prices to their lowest point since 2005. While most shippers have seen great opportunities with the decline in pricing, the market is changing. As recent research from Noel Perry and FTR Associates indicates, market pricing bottomed out in the second quarter of 2009 and is beginning to rise (see chart below). This means shippers have started turning to a different set of criteria to determine who will be moving their freight.

As we have seen in past cycles, dramatic pricing drops have forced smaller carriers out of the market. However, the issues in the banking industry, and an unwillingness to reclaim toxic assets (such as repossessing trucks with delinquent loans) has created a lingering imbalance between supply and demand. Currently, there is a large population of carriers who are keeping their small businesses running by paying taxes and licensing fees at the expense of making truck payments.

This trend has many shippers nervous, with the general feeling being the banks have simply put a longer fuse on a bigger bomb. There is also concern among shippers that no one knows how high prices will go once the capacity bubble bursts; especially now that we are starting to see some small signs of economic recovery. Thus, with the truckload prices starting to rise, more and more shippers are choosing stability over short-term cost advantages.



Sources: Noel Perry, FTR Associates

Third-party logistics providers become a smart choice for shippers.

By nature of normal historic supply/demand economics, the ratio between truckload capacity and truckload supply will balance itself out, allowing the carriers who remain to makes up losses from the difficult economy.

The good news is the truckload industry is a highly fragmented industry with 96 percent of trucking companies having 20 or fewer trucks. More importantly, a significant number of these carriers have become dependent on the aggregate freight volumes of third party logistics companies (3PLs) to keep their businesses running.

This offers two advantages for shippers. The first is the stability 3PLs offer. These non-asset providers have been the most successful in this economy and have been able to build a great deal of loyalty among carriers. Also, the average 3PL purchases $10 million to $100 million of transportation every year, giving them considerable leverage to negotiate better rates for the average shipper.

A 3PL like Schneider Logistics, who also offers a broad portfolio of services, can drive costs out of a business in many ways. As an example, Schneider Logistics has brokerage relationships with full truckload carriers, intermodal providers, temperature-controlled, flatbed, specialized and less-than-truckload carriers. This is an advantage to businesses that tend to move a majority of their freight in one mode. The occasional refrigerated load can be a time-consuming and costly endeavor for a shipper that utilizes dry vans most of the time. That shipper doesn't have the relationships or the purchasing power to manage cost for that occasional load.

One of the largest advantages of working with a broad portfolio of services is that company can offer multiple options to manage costs. With transportation pricing on the rise, and shippers continuously feeling cost pressures, multi-mode brokers have the ability to look across all of its services, offering shippers the most cost-effective mode for delivery.

Beyond pricing advantages, a good 3PL offers convenience to small and medium-sizes shippers. Instead of managing multiple relationships with carriers, an ever-changing list of providers and multiple pricing and billing profiles, companies like Schneider Logistics offer a single point of contact and streamlined billing for busy shippers. This allows more time for individuals to focus on their core business.

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LOGISTICS knowledgebase©

By Kurt Cavano, CEO, TradeCard
Phone: 212-405-1818 * Email: kcavano@tradecard.com

Ready for the Rebound

One good thing about difficult times is they drive people to take action. It's easy to be nonchalant about counting pennies when dollar bills are everywhere. But when things get tight, lip service surrounding efficiency and automation just won't do.

Tomorrow's leaders are using the recession to address manual processes, paper and other inefficiencies. Using the current recession to implement big picture strategies that will generate supply chain network efficiency will pay heavy dividends when the rebound hits. How? Picture being able to handle more business volume with less people. Not just by asking more from your staff and trading partners—but by investing in technology to get more out of your processes. When processes and transactions are automated, an up-tick in volume won't mean a rush to hire more people. Instead it will mean better profits through a smarter business pipeline that can do more with less. When the rebound occurs, those who invested and made their supply chain networks more agile, more transparent and more compliant will win.

Taking First Steps

Look beyond your suppliers…down to your critical raw materials providers. Are they on the same system? Does your raw materials provider have access to the same critical information, such as planning data, as your supplier? Are processes in place that allow you to handle large volumes and manage by exception, rather than touching every transaction multiple times? Does your accounts payable department have a no-touch system for rapid turnaround or does it manually process each payment? With the right approach, many of the goals and initiatives in place today to survive the recession can lead directly into a competitive advantage in the rebound years.

Here's an interesting exercise. Try examining a few of these metrics within your supply chain network. You just might find an opportunity to improve your strategy.

- Where does paper exist in your supply chain network? (yes, even e-mail)
- How many people within your organization have to manually touch a transaction document, such as a purchase order or invoice?
- What is your process for monitoring suppliers' performance and viability?
- How long does it take to on-board a new supplier?
- How are your trading partners communicating with you on each transaction?
- Where in your supply chain do bottlenecks exist due to capital constraints?

If any of these points raises concern, then it might be worthwhile to examine options that can help you switch to exception-based processing, and can automate workflows and documents within your supply chain network community. Picture a single platform that connects buyers with their suppliers, raw materials providers, financial institutions, agents and other key parties. Picture the flow of all sourcing information including plans, purchase orders and shipping data delivered in one place. Picture financial services such as export financing and early payments, being available at all steps along the way to ensure the lifeline of your supply chain network—capital—is available.

When the rebound takes hold, those companies that have found a way to do more with less will have an advantage. When an up-tick in demand arrives, 2010 leaders won't be scrambling to find new suppliers or personnel. They'll be able to process more transactions and documents with fewer people. They'll have fewer errors and delays in the supply chain. They'll have healthier suppliers. And the bottom line result: they will be more profitable than their competitors.

By Geoff Comrie, CEO, Transite Technology
www.transite.com

Immediate Steps Toward Supply Chain And Transportation Integration

Finally! Now, there is much more action toward integrating the transportation function into the Supply Chain. For years, there has been the realization of the high volume of money being wasted associated with transportation expenses – inbound, outbound and "plant-to-plant."

Let's look at some industry numbers:

- Overall inbound, production-related and outbound transportation is often the 3rd highest expense on a company's P & L
- While logistics can comprise 15% of product total cost, money spent on transportation is 50% of a company's logistic costs
- U.S. companies spend over $750 billion on transportation & logistics
- Most companies overspend by 20% due to poor transportation decisions

To optimize transportation management into the supply chain, it's critical to integrate transportation management best practices, process management and people across the entire supply chain. These interdependencies and challenges can intimidate companies and deter them from fully committing to transportation integration. Once a company has decided to make the commitment, here are some tips to help make this transition a successful one:

- **Take it step by step.** Instead of taking one giant leap to implement an entire plan, take it one step at a time. Prioritize steps based on business needs and other factors. If done correctly, it can even pay for itself when the savings acquired in the first step can pay for the second step, and so on.
- **Combine processes and people with technology.** Technology can only take you so far. It is crucial that you implement the correct processes and have key employees and functions onboard with the approach.
- **Create Team Thinking and embrace change:** "Psychology" is as important as getting the right tools and processes. Create a project environment where everyone is working toward the common goal. It's also important to bring in external (different parts of your supply chain) sectors of your business.
- **Don't Reinvent the Wheel:** Talk with people, companies, and industry experts etc. who have experiences. This step can save time, energy and money.

Integrating transportation into your supply chain may seem like a daunting task. By taking advantage of modern transportation management solutions significant step-by-step approaches can be initiated to take on the challenge.

Look at taking these immediate steps:

1. **Save on Inbound Freight:** When working with suppliers, work with them to separate the cost of goods from freight. This provides visibility of the actual cost of freight so transportation management practices can be applied to reduce inbound shipping costs. Ultimately, companies achieve this reduction by not paying the up-charged shipping costs and directing suppliers to use the least cost transportation method as determined by your own company's carrier agreements – not the vendor's.
2. **Make Money on Outbound Freight:** First, get rid of the static routing guide and use actual cost instead of simple parameters such as weight & mode. You will be greatly surprised at the savings, not only within the LTL mode, but also between modes. Secondly, look for ways to optimize your transportation practices to lower transportation costs. Such practices offer the ability to make more money in "prepay and add" applications where transportation costs to the customer should consistently be viewed as a profit center.
3. **Generate and Surface Quality Data to See Financial Impact of Inbound and Outbound Freight:** Data is critical in the generation of meaningful financial reports. This puts emphasis into detailed electronic transactions, the appropriate technologies, and smooth integration into the financial reporting system. Immediately, a company will be able to view: the financial impact of cost of transportation (inbound and outbound) into cost of goods sold, ability to meet customer-driven service levels, and more.
4. **Empower Customer Service:** Enable customer services to see accurate transportation price information. This delivers real-time accuracy while eliminating guesses, estimates or call-backs. The transaction can be closed faster and shipping profitability is maintained at a desired margin.

In closing, constantly negotiating with and between carriers to get the lowest prices does not offer a sustainable competitive advantage particularly if competitors can get the same deals. Optimized transportation management integration into the supply chain requires not only optimized rates, but optimized inbound and outbound transportation management practices across the organization.

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3PLLINE

by Sam Polakoff

ISF Regulation: 10+2 Much?

Effective Jan. 26, 2010, U.S. ocean freight importers must complete a properly executed Importer Security Filing (ISF) before loading cargo onto a vessel at a foreign port. Also known as 10+2, the Customs and Border Protection (CBP) regulation, intended to ensure the safety of ocean containers entering U.S. ports, requires U.S. importers or agents to electronically submit 10 key pieces of data about the container's contents 24 hours prior to loading. It also asks the steamship line to electronically submit an additional two data points no later than 48 hours after departure.

The 10 data points required are:

1. Manufacturer name and address.
2. Seller name and address.
3. Buyer name and address.
4. Ship-to name and address.
5. Container stuffing location.
6. Consolidator name and address.
7. Importer of record number (IRS).
8. Consignee number (IRS).
9. Country of origin code.
10. Commodity: HTS-6.

An 11th data element, the master bill of lading number, is also required of the importer. Although not readily discussed in 10+2 circles, the absence of this critical data element will delay the ISF process. The two data points required of the steamship line are the vessel stow plan and a container status data message.

All ISF filings must be submitted electronically via the Automated Manifest System or Automated Broker Interface. If there are changes to the data points, the filer must update them before the goods arrive in the United States. Should unfiled cargo be inadvertently loaded at the foreign port, it will likely be off-loaded at another port of call prior to reaching the United States. Imagine the headache this could cause the importer. ISF is certainly not foolproof.

SPEED VS. SAFETY

Years in the making, the ISF regulation pushes the responsibility–and risk–across the ocean and back to the foreign port. For those who suggest that ISF is another security provision adversely affecting supply chain velocity, consider the alternative.

In the wake of Sept. 11, many pundits suggested that every ocean container entering the United States be X-rayed prior to clearing customs. Think about the magnitude of that task and the required resources. This effort would have left produce rotting in the harbor waiting for an X-ray and cut supply chain velocity to the speed of a 10-mile highway backup–not to mention the added cost to importers.

By comparison, ISF is a reasonable measure that, while not flawless, offers U.S. importers a greater level of security with a minimal time and cost burden. Failure to comply with the new law subjects shippers to fines up to $5,000 per occurrence for a first offense.

To avoid costly fines, most importers will ultimately rely on an agent to make the filing on their behalf. The fee most agents assess for this service is negligible compared to the surcharges and time delays that might have occurred under the container X-ray plan.

CBP is committed to fully supporting the trade community as it strives to comply with the new regulation. The Department of Homeland Security has pledged to analyze the data procured to determine whether the data points should be eliminated, modified, or remain unchanged.

The ISF regulation may not be a perfect plan, but it is a step in the right direction. ■

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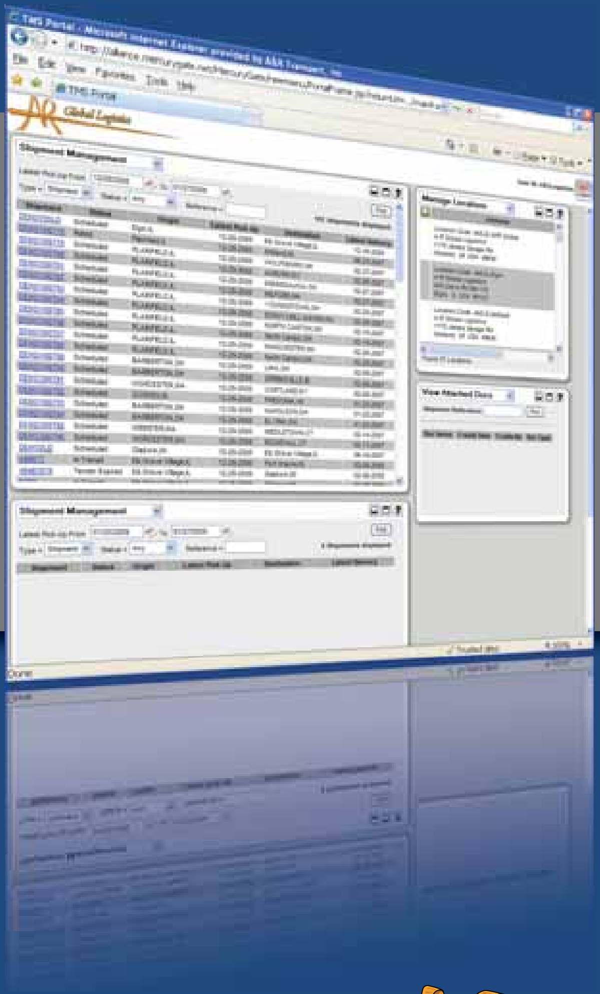
d. Supply Chain Analysis and Optimization
e. Proven Cost Reduction Strategies
f. All of the Above



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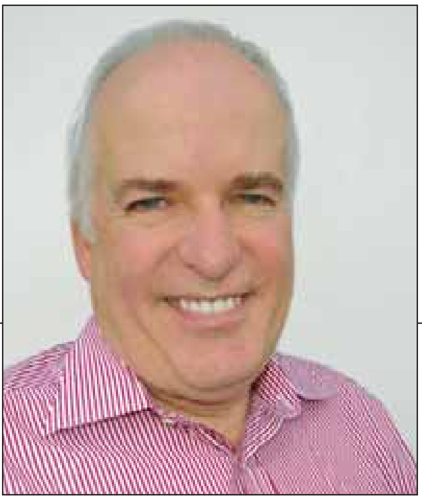

ITMATTERS

by Eric Allais

Warehouse Metrics: Measure What Matters

Today's warehouse managers often accrue massive amounts of performance data, but sometimes find they can apply little of it toward making productivity gains or customer service improvements. Instead of becoming overwhelmed with data, managers should identify and focus on the most useful metrics to gather, report, and apply.

Tools or modules often found in warehouse management systems (WMS) can automatically capture key data over a specified time period (such as one month) and display and report it as graphs and trends supported by the underlying data. This capability should make it easy to quickly identify problems.

When implementing new measurement tools and best practices, consider starting with what your customers care about most–the Perfect Order. Every warehouse strives for Perfect Orders, in which customers consistently receive the right product, on time, undamaged, and with the correct documentation. With virtually error-free shipments, customer satisfaction increases and customer support costs decrease.

The Perfect Order is a calculation of the error-free rate of each stage of a purchase order. When customers have a problem with an order received, they notify their distributor. The distributor then tracks the error in the WMS with "reason codes" assigned to categories such as warehouse pick accuracy, on-time delivery, and invoice accuracy.

This data is then calculated to determine the Perfect Order metric. If, for example, five warehouse pick accuracy errors are flagged on 10,000 lines, total warehouse pick accuracy rate is 99.95 percent. If on-time delivery rate is 99.2 percent, invoice accuracy rate is 96 percent, shipped without damage rate is 99 percent, and order entry accuracy rate is 99.2 percent, then the total Perfect Order metric is 94.04 percent.

MADE TO ORDER

Additional recommended metrics to consider when evaluating a warehouse's order performance include the following:

■ **Fill rate.** This data measures lines shipped versus lines ordered by a customer. Fill rate encompasses more than just warehouse performance because it also depends on ordered items being in stock and available. From the customer's perspective, fill rate represents the service level a distributor can provide.

■ **Ship to promise.** This figure measures the timeliness of order filling, while the shipping accuracy rate measures the accuracy of order filling as viewed by the customer.

■ **Customer retention.** This metric charts the number and percentage of customers during the prior time period who are also customers in the current period. Depending on the frequency of purchase, longer time periods, such as six months or one year, provide a more meaningful measurement. Over several years, you can chart the trend of increasing or decreasing retention.

■ **New customers.** This record charts the number and percentage of new customers in each time period, where a new customer is one who bought in the current period but not in any preceding time period.

WHAT'S IN STOCK

Once these order metrics are well in place, consider key metrics for tracking and managing inventory. With the right inventory tools, distributors and

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wholesalers know at all times exactly what product is in the warehouse, where it's located, and when it needs to be replenished. Greater inventory accuracy and control results in less overstock/deadstock, higher turnover, and better data for financial planning.

Key inventory metrics include:

- **Inventory accuracy.** Used to identify product discrepancies, this measurement is typically derived from cycle counts, a function within a WMS that automatically counts a subset of inventory on a daily demand or on a scheduled basis.
- **Inventory turnover.** This figure measures purchasing management and timeliness of vendor returns. It is the number of times that inventory cycles or turns over per year.

The next recommended area of measurement, and the one that matters most to CFOs, is expense control. Specifically, this data looks at total warehouse costs as a percent of company sales. Warehouse costs typically include direct and indirect labor, employee benefits, supplies, operating equipment and maintenance, rent, utilities, and depreciation.

Expense control also measures transportation and logistics costs as a percent of sales, as well as sales and lines shipped by each warehouse employee per hour.

ADDING IT ALL UP

Once enough warehouse transaction data points have been accrued, it is easy to establish some realistic productivity standards. Consider benchmarking the warehouse cost structure and productivity per person against other distributors. Or, benchmark against industry survey results such as the annual research survey conducted by Georgia Southern University and consultancy Supply Chain Visions.

Measuring progress against the warehouse's own targets is more useful, however, because performance depends on a variety of unique factors such as processes, specific customer expectations, and automated materials handling infrastructure.

Over time, consider leveraging these key metrics by applying new variables. For example, a warehouse employee incentive might spark a dramatic improvement in Perfect Order numbers. Chart the impact. And continue to seek only those key data points that truly demonstrate the warehouse's contribution to the company. ■

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by Robert F. Caton

Gearing Up for 100% Air Cargo Screening

A complex shift in the air cargo industry begins in August 2010, when the Transportation Security Administration (TSA) will require 100-percent screening of all air cargo carried in passenger planes departing from or arriving at U.S. airports.

In response to the Sept. 11 terrorist attacks, the TSA created a security mandate with an initial step of 30-percent air cargo screening. In February 2009, a 50-percent cargo screening mandate for passenger aircraft was activated as an incremental step toward full screening. The increase to 50-percent screening caused little disruption because overall volumes of goods in transit had dipped due to the global economic downturn.

NEW LEVELS OF SCREENING

The air cargo industry now faces the next level in screening requirements. The move from 50-percent to 100-percent screening is proving to be more complex, because with less than full screening, the percentage required can be screened across any configuration of allotments–for example, one of two planes, or half of both planes, whichever was more practical. That approach is no longer an option.

The TSA realized early on that it would be nearly impossible to screen 100 percent of passenger aircraft cargo at existing cargo terminals. A full 100-percent screening could create serious airport delays, damaging an already struggling industry.

To address concerns about screening delays, the TSA introduced the Certified Cargo Screening Program (CCSP), allowing interested shippers and freight forwarders the option to screen their own cargo, provided they follow and adopt TSA security requirements. The program is voluntary and participants become TSA-regulated entities once enrolled.

Another challenge the air cargo industry faces is that much of the affordable screening technology is second-generation equipment used for baggage screening. Today, there is very little approved cost-effective screening technology specifically developed for air cargo that is able to bulk-screen freight, leaving supply chain security to individual piece-level screening.

While new technology is being developed and tested, it is not likely to be available anytime soon. In the interim, the TSA created an outline for independent cargo screening facilities (ICSF) with smaller freight forwarders and independent air carriers in mind. This allows companies that can't afford large equipment investments to screen their cargo under a more cost-effective, centralized shared-service model.

SECURITY AND GLOBAL TRADE

Increasing trade globalization makes international standards more critical than ever before, and the United States often leads the charge due to its vast trading partner network, economy size, and political influence.

The TSA has indicated that it is able to achieve 100-percent screening for cargo originating within the United States, yet cannot meet the same expectations for international inbound cargo by August 2010. "Harmonizing the agency's air cargo security standards with those of other nations" is paramount among the complexities highlighted in the Government Accountability Office's March 2009 report.

In September 2008, the European Union (EU) and the United States entered into an agreement to "coordinate efforts to enhance air cargo security" in order to create a legal framework that would

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satisfy security requirements while also providing a system by which authorities could expedite screening.

While the EU already uses progressive air cargo security practices, the United States should look to Mexico and Canada, as transportation interconnectivity in North America allows for seamless cross-border movement of truck cargo. For example, the Canadian Partners in Protection program and the U.S. Customs-Trade Partnership Against Terrorism (C-TPAT) can be synchronized to allow continued use of the larger cargo lift opportunities offered by U.S. gateways, due to security program similarities.

Other global regions may find it more difficult to integrate U.S. security requirements with their own. Cargo handling systems and regulations in many Asian countries, for example, are somewhat different than in the United States. While Asian countries may be reluctant to adopt U.S.-TSA security requirements, U.S. programs such as C-TPAT have been accepted in many countries.

The next few years may bring increased demand for logistics real estate to accommodate screening equipment and safe maneuverability. The immediate need to store, screen, and secure freight within approved screening facilities may require larger warehouses, as screening and securing freight just before delivery to carriers must be done on the floor level.

A PUSH TO GATEWAYS

The overall competitive nature of the industry will push cargo to international gateway airports in the United States, leading to increased international air cargo volume concentration. International gateway airports will provide a more attractive buy rate for transportation given the relatively higher flight operation presence.

The importance of speed in air cargo handling is also a significant factor, and will further increase activity to major gateway airports as companies seek to compress time required for other shipping activities to accommodate additional screening steps without compromising speed to market.

WILL THE INDUSTRY BE READY?

Trade and gross domestic product are closely interrelated, and the long-term relationship between them has remained intact, even during the recent economic downturn. We are now at an inflection point where signs of recovery are becoming clear.

A recent Boeing market outlook calls for 5.4-percent annual growth in global cargo volumes over the next 20 years starting in 2010 (a drop from last year's 5.8-percent forecast). Although what lies ahead is uncertain, the air cargo industry will see recovery by the beginning of next year, just before the next security hurdle in the third quarter of 2010.

The expected rebound in cargo volumes, combined with the necessary fulfillment of 100-percent screening, intensifies the demands on a recovering industry. The security requirements have the ability to hinder growth for the industry if ample preparation for cargo screening falls short. All industry stakeholders need to plan for the protection and integrity of international commerce as it relates to air cargo, to prepare for the economic turnaround.

The industry will need to balance impending air cargo screening requirements with demands for swift delivery of goods. The shift to 100-percent screening is complicated, especially for an industry recovering from severe air cargo volume declines. The need for speed and cost efficiencies will ultimately further concentrate air cargo handling at key international hub and gateway airports. Demand will increase for well-located industrial real estate.

Airports, cargo companies, and other providers are positioning themselves for the economic upturn to maintain or increase their competitive edge. ■

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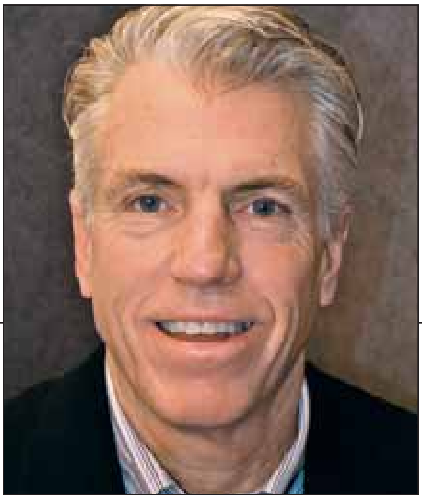

ECODEV

ISSUES AFFECTING | ECONOMIC DEVELOPMENT

by Robert W. Jennings

SIN Centers: An Investment in Ideas

Today's entrepreneurs are developing new ideas, patents, systems, and technologies that could have a profound and sustainable impact on our ability to promote the next generation of green supply chains. For many of them, however, progress is slowed or halted by a lack of reliable funding and effective economic development programs.

Every day, more foreign companies file U.S. patents for green and sustainable technology innovations. We must innovate if we wish to thrive. The answer to helping these entrepreneurs thrive is synchronous innovation networks (SIN), which are regional centers of excellence funded by a combination of public and private resources.

Forward-thinking economic development professionals in state and local governments, along with the private companies most likely to benefit from the centers' innovations, must work together to create these networks in the United States.

Operating as true public-private partnerships, these economic development organizations, as gatekeepers of federal and local dollars, and corporate entities with sustainable programs and real-world budgets, can foster innovation and support entrepreneurs.

Industry and government leaders can help establish SIN centers structured around a particular technology, a regional cluster strategy, or even to promote "economic gardening." Here, entrepreneurs can focus on developing new technologies for alternative energy, smart grid, railcar technology, GPS, and other systems.

In addition to the innovators themselves, SIN centers bring together patent attorneys, community colleges, and even complementary technologies. The unifying theme is fostering innovation within the confines of the current market and creating long-term value.

LOCATION, LOCATION, LOCATION

SIN centers could be housed in communities' underutilized assets, such as abandoned industrial buildings in outlying areas, or sited in the next ring of less-than-dynamic municipal centers. It would be essential, however, to locate the centers close to multiple transportation modes.

Smaller communities are well-suited as homes to SIN centers if they have the infrastructure to support them. So are communities that have larger business parks with a sound industrial base. Proximity to thriving businesses benefits SIN centers because the companies may be willing to help fund and foster innovation through pilot programs and demonstration projects.

To attract investment from both public and private sources, SIN centers would be required to incorporate innovative green and sustainable ideas.

MAKING A START

Support at the statewide and regional levels helps entrepreneurs connect to federal money to support innovation. Initiatives in the American Recovery and Reinvestment Act geared to supporting facilities for smart batteries is a start.

Bringing together multiple entities in synch with a cluster of buildings and like-minded research goals can achieve even more amplified results and provide a fast start to a development program geared toward innovation.

If we are to weather the next economic downturn, and build models to sustain us in the next business cycle, we must at this defining moment find, fund, and embrace SIN. ■

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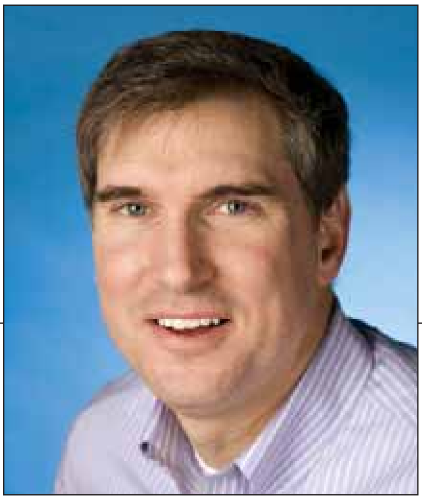

VIEWPOINT

by Mick Mountz

Using Distribution and Fulfillment as Strategic Weapons

Distribution center (DC) assets in the supply chain are often relegated to cost center, necessary evil, or even non-value-added status. But focusing only on costs overlooks distribution and fulfillment's value to the corporation.

In Web retailing, for example, price comparison shopping has neutralized cost advantages to the point where consumers make online buying decisions based on whether an item is immediately available and ready for delivery.

Restocking retail stores offers another example. How can one ensure timely and accurate fulfillment when new products are constantly being introduced?

The best retailers and e-commerce companies carefully select and intelligently apply automation not only to boost productivity, but also to turn the DC into a competitive weapon. How can the DC be a source of advantage when all it does is store, move, and sort the inventory? It's a matter of using the right tools to arrange and manipulate the goods cleverly and efficiently.

Consider the following factors when crafting your DC automation strategy:

■ **Strategic use of capital.** Many automation projects expand to include myriad factors such as network consulting, a site move, a new WMS, and multiple equipment vendors and systems integrators. All this complexity may lead management to deploy materials handling equipment sized for five years growth, though they need only 50 to 70 percent of that capacity today.

For more efficient capital use, seek out automation strategies that reinvest in existing building assets, tune up zones that need a capacity boost, automate equipment charging to save labor, or divert completed orders sooner to cut cycle times.

■ **Supply chain flexibility.** Automation and flexibility do not often go hand-in-hand. The trick is for automation to cut out non-value-added steps and activities, yet avoid "hard-coding" the facility to one type of never-changing SKU or order profile. Look at your operation's changes for the past five years, then look forward and assume twice as much change. Challenge your automation providers with those constraints and you will find some interesting solutions.

■ **Supply stream efficiencies.** A well-run operation needs only to deflect inventory from the inbound dock to the outbound dock like a basketball player makes a touch pass to his teammate on a drive to the hoop. This view of supply stream deflection allows us to look upstream and down to gain further efficiencies.

For example, what if all the cases received into your building were already staged on portable racks and could slip right into your pick line? You could realize major receiving, putaway, and replenishment labor savings–as well as a tighter relationship with your supplier–that would be hard for your competitors to replicate.

On the downstream side, your automation and sortation strategies could create dramatic retail store labor savings by picking and packing products in a customized sequence that facilitates quick in-store shelf stocking.

Insist on these supply stream savings in the acceptance criteria for any automation project, and you will learn about your vendor's capabilities and your company's internal goals, priorities, and alignment.

The design and automation of your distribution and fulfillment operations can dramatically influence your customers' experience, creating a strategic advantage that is hard to crack. ■

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by C. Daniel Negron

New Year, New Insurance Review

The start of the new year is the time to make resolutions, and risk managers should resolve to review their operations to ensure that risk and insurance programs are in order.

Your risk review should address several key questions:

■ **Are you planning to offer new services?** If so, consider your insurance obligations before the transaction closes. In one recent case, an operator negotiated with his customer to warehouse high-value electronics in the Dominican Republic. He signed an operation agreement that contained an indemnification running to his customer and an insurance provision requiring a significant limit to cover the full value of the goods in a catastrophic loss.

Unfortunately, the cover required under the agreement proved difficult to obtain, and the cost was disproportionately high in relation to the revenue derived from the service. Be sure you get the full picture of what you agree to provide.

■ **Have you signed new agreements with customers or service providers?** Because customers and service providers constantly update their agreements, it is prudent to review them to ensure they are in line with your company's insurance program. In the best of all worlds, service agreements are vetted before they are signed. But, this is often not the case in offices having multiple locations or where agreements are not centrally negotiated.

■ **Do you need to consider regulatory compliance issues?** The most significant new regulation affecting shippers is the U.S. Customs and Border Protection (CBP) Importer Security Filing requirement. Although the rule, also known as 10+2, was enacted in January 2009, CBP deferred its enforcement until January 2010. Compliance with the regulation is now mandatory.

Under the regulation, importers and their agents are required to submit an Importer Security Filing containing 10 data elements 24 hours before goods are loaded onto a vessel. Ocean carriers must also provide two message sets within 48 hours of the vessel's departure. Failure to comply with the regulation can result in fines or other penalties, such as denying entry of the goods.

While the regulation seeks to ensure that importers provide the required information accurately and on time, it also affects the agents who are entrusted with supplying this information. Recent events have again landed terrorism in the headlines, and compliance with this regulation, which is intended to address a terrorist threat, will be readily enforced.

If you are an intermediary, make sure you take the necessary steps to receive the required information in a timely manner. Have your professional liability insurer confirm that your insurance extends to this service. Also confirm that it will respond to financial losses suffered by your customer, and cover fines and other penalties incurred as a result of breaching the regulation.

■ **Would you like to insure aspects of your business that are not currently insured?** This is your opportunity to become introspective about your operation and insurance cover. Meet with your attorneys and loss prevention specialists. Identify areas that present the greatest risks, and gauge your appetite for managing them. Then establish a plan of action in the event of a loss. Your organization will become more attractive to your insurer, which could lead to broader coverage when you need it. ■

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ON THE ROAD

A Supply Chain Travelogue

by Joseph O'Reilly

Off The Beaten Path

Cluttering pages with supply chain strategies, logistics lexicon, elusive acronyms, and, periodically, run-on sentences, is habit forming. But it comes with my job.

So does reverie.

In between pulling and parsing source information, then writing, the mind wanders. There's no shortage of distractions. Press releases, phone conversations, e-mails, RSS feeds, and Google have a way of triggering a not-so-recessive Kerouac gene, transporting me to people and places worlds and times apart. I often find myself compelled by an urge to drop down from the "editsphere" and engage the supply chain on the ground, in person.

On the Road: A Supply Chain Travelogue embraces this impulse.

Beginning in February 2009, I took to the road in search of new perspectives. My purpose was manifold: to see firsthand the inner workings of the U.S. supply chain; to visit with transportation and logistics professionals on their terms; to gain a better appreciation for the labor and love that make things and make things move; and finally, to share a "thick description" of my journey and take you along for the ride.


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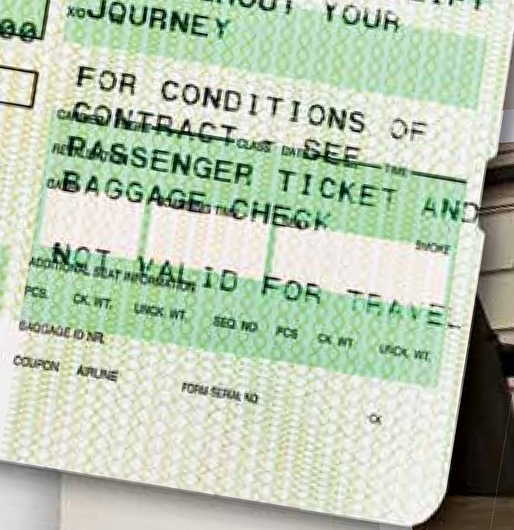


With Sam Bellavance (right) in Nashua, N.H.

I was equally motivated by previous experiences.

I recall driving eastward along the Trans-Canada Highway, from Prince Rupert, British Columbia, captivated by double-stacked Canadian National container trains flowing alongside the Skeena River. I still marvel at the remoteness of this intermodal corridor hemmed in by forever-green mountains.

I relish memories of bracing myself deck-side on a pilot boat in Norfolk, Va., imagining what it might be like steering Post Panamax containerships to port; of a tour guide's up-close introduction to the AlpTransit Gotthard Tunnel in Switzerland; of speaking with a Mark Twain-mustachioed UPS Air Cargo pilot on the flight deck of a freighter preparing for takeoff at Ted Stevens Anchorage International Airport in Alaska.

I also remember Martin McVicar, president of Combilift Ltd., showing me around his forklift manufacturing facility in Co. Monaghan, Ireland; then inviting me to test-drive a narrow-aisle lift truck–which I did–pallet and white-knuckle nerve in tow.

You may find clues to these sometimes-seen phenomena underneath a paper-strewn pile, hidden in a spam-filtered in-box, dripping from marketing collateral, or simply through word-of-mouth. But you can only really appreciate what you see in the flesh. Welcome to the *2010 Logistics Planner.*

Seeing the Supply Chain for What it's Worth

The supply chain is constantly shifting in countless directions, absorbing layers of complexity as globalization stretches commerce and technology squeezes information. When you tear it apart, take away the artifice, what do you discover?

I found myself driving down dusty roads, sidestepping lift trucks, negotiating aisles and rush-hour traffic, slipping into steel-toed boots and out of hair nets. There were slag piles and Purell dispensers, automated retrieval systems and remotely controlled locomotives, plastic pellets, wooden pallets, and a composite of personalities. Up close, the supply chain dissipates. It distills into unique people, places, and perspectives.

You begin to understand this when you drive hundreds of miles through remote desert to Belen, N.M., and the site of a Burlington Northern Santa Fe inspection yard. It becomes apparent as you slalom through traffic in a New York City taxi, bound for Port Elizabeth, N.J., the birthplace of containerization; or fly over North Carolina's heavily wooded Piedmont Triad, where plans for an Aerotropolis have captured the imagination of local businesses.

Sometimes the people are just as memorable as the place. In Nashua, N.H., Bellavance Beverage Company, a fourth-generation, family-owned wholesaler, serves up Anheuser-Busch InBev's global brands to local customers; and in Morris, Ill., A&R Logistics is molding the future for plastics manufacturers – through the visionary leadership of CEO James Bedeker and his operations staff.

When I began this odyssey nearly one year ago, the economy was in code red–which is even more telling. To no small degree, this article confronts recessionary fear. Rather, in small degrees, these stories give a face to people and companies that are working in overdrive to give our economy the green light.

In my mind's eye, all these experiences, past and recent past, stand apart. They should. Each of these stories exposes the day-to-day motions that make containerships shake, DC racks rattle, and truckloads roll. But they are also part of a much larger narrative that tops off this issue, then spills into *Inbound Logistics* every month of the year.

Welcome to my world. More importantly, thank you for inviting me into yours. Please join me as I hit the road.

The Land of Enchantment and 10,000-foot Trains

DESTINATION:

Belen, New Mexico

LOCATION:

Central New Mexico...32 miles south of Albuquerque along I-25

POPULATION:

6,901

DISTANCE FROM INBOUND LOGISTICS HQ:

2,033 miles

You don't come upon Belen, New Mexico by chance.

It takes purpose. For me, that purpose happened by chance.

I had randomly finished reading three books about New Mexico's rich history: Hampton Side's *Blood and Thunder*, an account of frontiersman Kit Carson's life and U.S. Manifest Destiny; *Billy the Kid*, a biography of the famous outlaw by Michael Wallis; and Tony Horowitz's *A Voyage Long and Strange*, a travel narrative that touches on Spanish exploration of the Southwest. Apparently, the impulse to explore New Mexico was my own manifest destiny.

I was also planning a circuitous ski trip, visiting a friend in Tucson, Ariz., before greeting the slopes in Steamboat Springs, Colo. Then an idea sprang. I contacted Jim Rogers, manager of media relations for BNSF Railway, to see if I could set up a visit at a facility in its Southwest division. I was expecting Phoenix or Albuquerque.

Belen was a revelation.

Belen, New Mexico

The Land of Enchantment and 10,000-foot Trains

Driving across New Mexico's sweeping semiarid plains, the crisp February air and the barrenness of the terrain ostensibly freeze and expose every minute detail you can imagine: Chihuahuan desert and red-rock mesas; prickly pears, yucca, and agave; the sweet, pungent smell of sagebrush; AM and FM static; a not-so-wily coyote along the roadside; and his luckier adversary skirting across Highway 26 with an audible "beep, beep."

Very quickly, you come to expect and appreciate the sublime in the *Land of Enchantment.*

There is yet another narrative that twists its way in and out of the canyons that build as you drive north toward Albuquerque. Periodically, glimpses of single and double-stacked intermodal containers, sandwiched between locomotives, on seemingly endless trains, flash in and out of view. Follow these flickering tracks long enough and you pass through Belen, a sleepy railroad community nestled in the valley of the Rio Grande River and in the shadow of the copper-colored Manzano Mountains.

Crossing The Border...in New Mexico

The flashing "Merge Right" signs are luminous against the dusky maroon backdrop of pancake-stacked mesas. Up to this point, traffic on I-25 has been light. Now, stuck between tractor-trailers, I'm following a slow procession away from the interstate into a roadside weigh station, thoroughly confused.

As I approach, I see a pack of uniformed officers lingering near the main building, their shadows lengthened by far too many floodlights. It's a U.S. Customs and Border Patrol checkpoint.

My bemusement quickly turns to amusement as I calculate the odds of finding a checkpoint in the middle of the Chihuahuan desert, 200 miles north of the Mexico border. I have nothing to fear, of course. But then there is a lingering doubt, an uneasy feeling, the kind you have as you pass through airport security.

I roll down the window and flash my driver's license. The Customs officer seems satisfied, asks me a few questions, then peers into the back of my Arizona-plated rental.

"What's in the bag?" he asks.

"Skis," I reply.

He squints again, shakes his head (*now who's confused*, I think). "Where are you going skiing?"

"Colorado territory," I counter, good-naturedly. And with an unexpected smile and wave of the hand I'm back on the road to Belen.

Moving north along I-25 into the heart of New Mexico, highway signage offers another reality. Subtle and austere clues to the state's vibrant and sometimes volatile history, and its part in President James K. Polk's vision of Manifest Destiny, materialize. The Santa Fe Trail, Fort Union, Fort Sumner, the Laguna, Acoma, and Isleta Indian reservations all share a puddled and muddled tale. Place names such as Silver City and Truth or Consequences tell a story of pioneer adventure, past and present–the former an old mining town and popular haunt of Billy the Kid, the latter a modern-day spa retreat for pampered adults. That's the truth.

Finding a New Star

The original settlement, christened Belén (Spanish for Bethlehem), resembles little of its namesake–cheap accommodations are plentiful. A quick exit off I-25 takes you through a commercial strip splashed with neon lights and signs for budget motels and fast food.

The bedroom community of nearly 7,000, 32 miles south of Albuquerque, is commonly referred to as "Hub City," commemorating the Atchison, Topeka, and Santa Fe Railroad, which first laid tracks through


Looking east toward Manzano Mtns

the area in the late 1800s.

In 1908, the Belen Cutoff was created as a bypass between Texico (on the Texas-New Mexico border) and Dalies, southwest of Albuquerque, instead of a more northerly passage. The new route from Chicago to Belen shortened the distance by only six miles, but it reduced the average grade from 158 feet per mile through Raton Pass (on the New Mexico-Colorado border) to 66 feet per mile. At the time it was a considerable engineering feat, improving operational consistency, velocity, and throughput.

Today, Belen and the railroad remain inseparable. The city is home to BNSF's largest inspection yard on the southern transcontinental corridor (Southern Transcon), linking Southern California and Chicago. Heading north on Main Street, take any right-hand turn and you'll find track. Equally telling, the railroad is the second-largest private sector employer in town after Walmart.

The BNSF facility, which extends about 14,000 feet end to end, is positioned geographically north to south, with the main lines connecting to the yard from the east and west–like a diagonally challenged, backward "Z". It runs parallel to Main Street seven blocks adrift, and lies between the town and the Rio Grande. Four tracks in each direction converge into one lead at both of the yard's ends. With up to 90 trains a day moving both east and west through the system, it's little wonder Belen has the largest signal mast in BNSF's Southwest Division.

"We are the NASCAR pit stop for trains," says Bob Gomes, general director of transportation at the Belen rail yard.

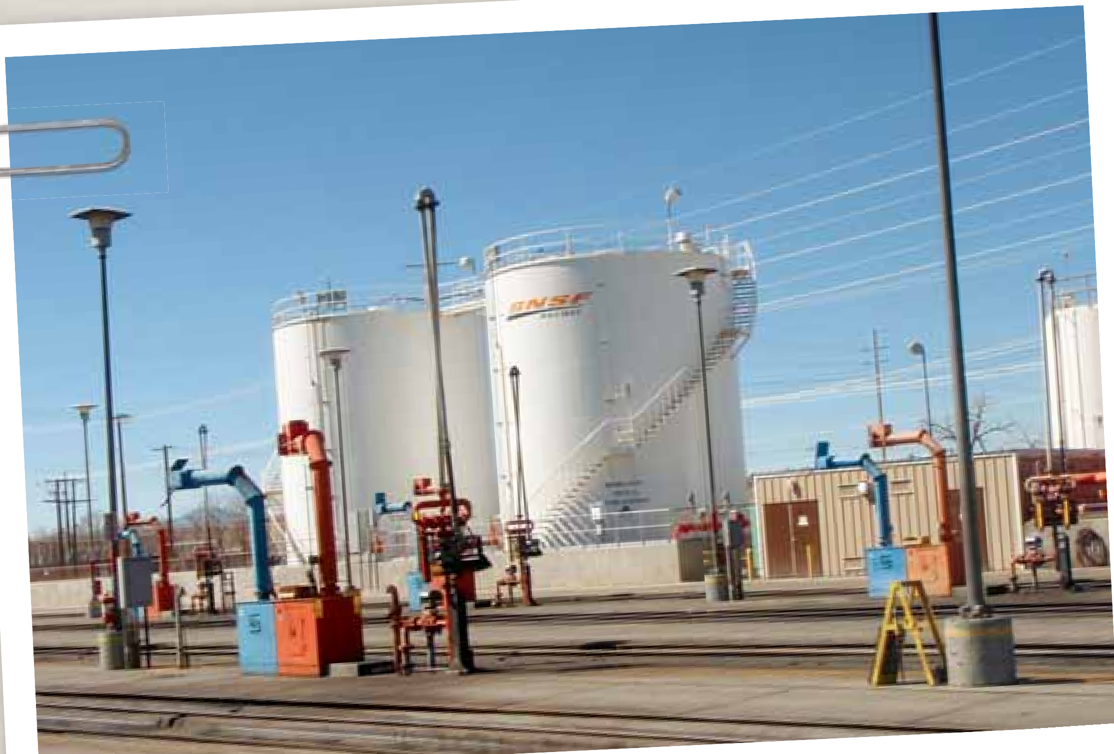
Gomes, whose passion for the tracks is only matched by his love of the links, has worked in various positions at BNSF Railway over the years.

"I started out as pre-med in college and worked for the railroad during the summer," he recalls. Burned out by plans for a career in the medical profession, he started working full-time as a train yard operator. "They had just stopped using Morse code for communication," Gomes says with a glint in his eye. He's not lying.

Nearly four decades removed, Morse code is an anachronism, but not Gomes. He has moved around

Belen, New Mexico

The Land of Enchantment and 10,000-foot Trains



Fuel for thought...140,000 gallons a day

with BNSF, working in Amarillo, Los Angeles, and now Belen, but his love for the railroad has endured for one simple reason.

"Working with people is the most enjoyable part of my job, they are the ones doing the business. People make the railroad run," he says.

Train Spotting

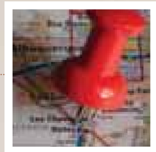
In the yard, in the flesh, steel dominates the view. Rail cars abound in varying sizes, colors, and types. Single-unit commodity trains share tracks with mixed merchandise trains. A BNSF reefer car covered in graffiti, a flatbed loaded with Sierra Pacific paper products, double-stacked Hub Group containers in articulated well cars, boxcars, centerbeam flat cars, tankers, hoppers, gondolas, and countless other rolling stock species complete the panorama.

Bringing some order to the yard, two pumpkin-orange BNSF locomotives, a 1,000-horsepower switcher locomotive (#3601) and another 3,000-horsepower workhorse (#6705), wait in anticipation, ready to begin assembling a new train.

The Belen facility, like others in the BNSF system, primarily serves as a maintenance and fueling oasis along the transcontinental journey. Trains are inspected every 1,000 miles. Workers refuel locomotives and service equipment, and the railroad uses these stops to switch crews.

The yard features a four-tank fuel farm, each reservoir holding 2.7 million gallons of fuel. At both ends of the facility, brightly colored orange and blue fuel pumps sit track-side, dwarfed by towering white tanks emblazoned with the BNSF logo. It takes approximately 17 minutes to refuel a locomotive, and on any given day the yard will consume 140,000 gallons of fuel.

Off track, a ShuttleLift gantry crane lies ready to spring into action. If there is a time-sensitive shipment coming inbound to Belen and a locomotive brake fails, for example, BNSF can pull a container off the train and transfer the cargo to its Albuquerque intermodal facility for transshipment.



Belen, New Mexico

The Land of Enchantment and 10,000-foot Trains

Block and Switch

The linear conformity of the yard's railroad tracks stands in stark contrast to the hodgepodge of equipment littering the area. But this visual anomaly reflects another important function of the Belen facility–mixing and matching trains.

BNSF uses the yard to block swap rail cars, essentially building trains and consolidating loads for final destination–akin to a warehouse crossdock. So a train moving from Barstow, Calif., eastward will stop in Belen for inspection and to shuffle cars and purify loads, says Gomes.

"Generally, there is not enough origin traffic to run end-to-end across the Transcon. So a facility such as Belen is important for consolidating loads and gaining efficiencies and economies of scale," he adds.

Building uniform trains is also critical to improving velocity and capacity throughout the network. Manifest trains, with mixed car types and cargo, are generally rebuilt into single units, with like commodities bound for one location.

"Trains need to be fully loaded with no gaps to run at maximum high-speed. It requires train car consistency. You can't have manifest trains with mixed cars," says Gomes.

The speed with which trains run across the sparsely populated and mostly flat Southwest is remarkable. Reaching 70 miles per hour in the flats, "it's the fastest freight railroad in the world," Gomes notes with pride.

This velocity also lends further credibility to the railroad's belief that intermodal business between West Coast ports and the U.S. interior will continue to grow. With 60 percent of U.S. consumed goods coming through the L.A. basin, New Mexico in general, and Belen specifically, are strategically located for rail volumes moving both east-west and north-south across the Mexican border.

A Modern Marvel

Currently, the majority of freight transiting Belen is carried on intermodal container stack trains. As inbound and outbound volumes warrant, BNSF can run trains on any number of the eight tracks in the yard to flex capacity.

Over the course of a week, traffic is well-balanced from the west and east. "During peak periods in 2006 and 2007, we averaged 92 trains per day through Belen. In 2009, to date, we average 68 trains per day, which is attributed to the weak economy," says Gomes.

A train that leaves Hobart, Calif., at 7 a.m. arrives in Belen at 5 a.m. the next day–22 hours all told. It takes two and a half days to go from Los Angeles to Chicago.

In 2007, BNSF began experimenting with an intermodal 10,000-foot train between Southern California, Clovis, N.M., and Chicago. Since then,

A Matter of Perspective

As I make my way around the rail yard, Bob Gomes' words linger: "People make the railroad run." At first glance, though, that sentiment doesn't whistle true. In the yard, people are mostly unseen. Unmanned switching locomotives move remotely. Periodically, I see two-man inspection crews buzz by on all-terrain vehicles (ATVs), scrutinizing equipment for mechanical and physical performance.

It's an odd sight to me. ATVs in a rail yard? Who knew?

I quickly learn the rail yard's entire switching operation runs on remote control. A BNSF utility engineer on each shift can coordinate efforts to dog-catch a train or manage special switching needs.

My nostalgia for sepia-toned photographs of men laboring on the railroad is dented. And well it should be. In the 21st century, the U.S. railroad is a colorful, dynamic, and automated freight-hauling machine. People still make it work–they just do it much more efficiently.

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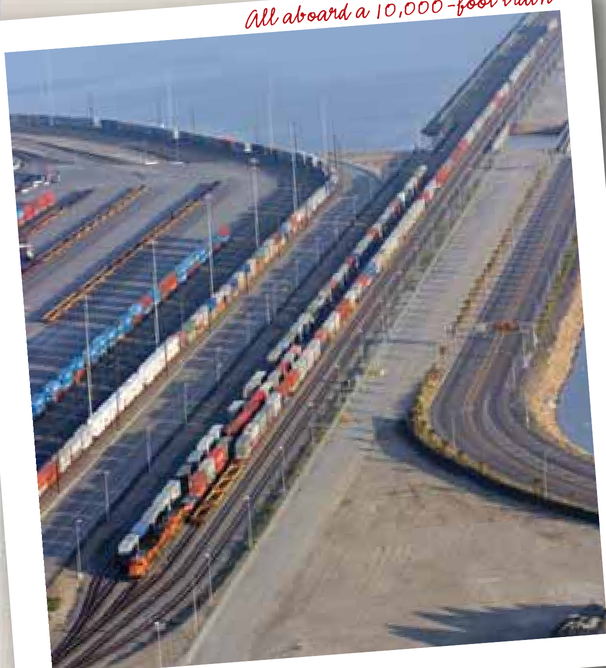
Belen, New Mexico

The Land of Enchantment and 10,000-foot Trains

the railroad has operated more than 800 extended length trains to gain further economies of scale and accommodate more intermodal customers' freight. The longer units now typically run from Southern California or San Bernardino to Chicago–with inspections in Belen, Kansas City, or Fort Madison, Iowa. The savings accrued by running these trains creates capacity for other intermodal and non-intermodal trains throughout BNSF's network.

"The 10,000-foot units take 2.5 trains out of the mix per week," says Gomes, "which saves $30,000 a week in crew labor."

All aboard a 10,000-foot train



Building and maintaining longer trains requires a great deal of planning and execution. A large chunk of track is necessary to stage and load equipment. To simplify the process, BNSF breaks the train into smaller sections on different tracks, loads each unit, then stages the complete train for movement.

When these mega trains began running through Belen, workers were inspecting cars and refueling locomotives at a 12,000-foot rail siding 10 miles east of town to allow for more space. But it became too costly in terms of time (six hours for inspections) and the expense of transporting workers offsite. BNSF now serves the trains inside the Belen yard.

With successful rollout of its 10,000-foot train configurations, BNSF is looking to squeeze even greater efficiencies through changes in power configuration–for example using distributed power, intermediately placed locomotives (three locomotives in the front, two in the middle, and two at the rear) remotely controlled by the lead engine. The railroad is also exploring other origin locations to run trains from.

Not one to rest on its locomotives, BNSF is engineering even longer trains. On July 10, 2009, BNSF tested its first 12,000-foot train, nearly 2.3 miles in length, from Southern California to Clovis. The record-busting haul carried 458 units and 11,256 tons more than 1,100 route miles.

Full Steam Ahead

Building monster trains is one thing. Making sure they can transit New Mexico's devilish canyons is another.

BNSF is currently working on several projects throughout the Southern Transcon, and in New Mexico specifically, to double- and triple-track lines. In 2008, the railroad announced a $2.45-billion capital commitment program that includes network upgrades to capacity-choking bottlenecks such as Abo Canyon, which lies due southeast from Belen. The existing route snakes around 500-foot-high bluffs, through cuts 150 feet deep, and over 70 foot-high bridges. BNSF is in the process of constructing a second mainline through this canyon to ease congestion and increase throughput.

Supplementary tracks on either side of the pass stage trains for passage through the canyon. Gomes likens it to a flagman directing one-way road construction traffic. "Moving through tight canyons, there is often only a single track for bi-directional traffic. It's a problem right now, but double track will fix that," he says.

Greater track redundancy and the continuing

The Land of Enchantment and 10,000-foot Trains

manifestation of longer trains place Belen in the middle of a ballooning transportation artery and on the precipice of an economic development boom. The challenge for railroads, and economic development interests as well, is keeping investment out of urban areas but in proximity to major markets. Albuquerque is the largest and fastest-growing city in New Mexico; it's also geographically isolated from any megapolitan area. So, the city has become an important intermodal feeder and terminus for BNSF's Transcon.

But Albuquerque can't grow north or east because of the Indian reservations, says Gomes. It can grow south, and Belen has become increasingly attractive. "The price of dirt is going way up," he notes.

Blazing New Trails

Motoring north from Belen along 1-25 past Albuquerque, you leave the Rio Grande behind and enter into the foothills of the Rocky Mountains. Outside Santa Fe, climbing through Ponderosa, Juniper, and Piñon forested mountains, leads to Glorieta Pass–site of a famous Civil War battle that checked Confederate incursion farther west. Then, skirting the Sangre de Cristo Mountains, you approach the Colorado border and Raton Pass, the same route of the Santa Fe Trail–the original interstate system–and the Atchison, Topeka, and Santa Fe Railroad's first transcontinental line.

Dropping down from the pass into the Purgatoire River Valley across the state line, vistas open up to the eastern plains. BNSF track reappears, meandering east and west of I-25 along Colorado's Front Range and well beyond.

Take out a map or follow your GPS north, west, east, or south and you will inevitably cross tracks again with BNSF and countless other railroads.

Along the way, you'll find more Belens. They may be few and far between the megalopoli stretching across the contiguous United States, but their importance in the domestic transportation mix is front and center, and growing. ■

In small ways I discovered that what passes day-to-day in Belen– routine inspections, crew changes, block swapping cars, and 10,000-foot trains – spins gears in Albuquerque, between California and Chicago, across the United States, North America, and supply chains the world over.

I write a lot about the railroad. Intermodalism is a hot topic these days, what with sustainability, capacity, and economy sweeping the consciousness of shippers and service providers alike.

My visit with BNSF confirmed an impression that has been building for some time – some might argue decades. History is repeating itself. The archaic railroad is back in vogue. Turn of the 20th century transportation is on a turntable ready to lock into 21st-century demand.

Sleepy railroad communities are stirring. Crossroads are sprouting, growing, and branching off, connecting to an array of towns and yards, coastal and inland ports, terminals, intermodal facilities, hub cities, and rail-served manufacturing and distribution centers.

Like any healthy, well-rooted organism, the railroad and its network of partners and infrastructure help nourish each other – attracting, hosting, and feeding more transportation and manufacturing development, industry and people, innovation and expansion.

It's happening in places like Belen.

On the Waterfront

DESTINATION:

Port Elizabeth, New Jersey

LOCATION:

Northern New Jersey, adjacent to Newark Bay, The New Jersey Turnpike, and Newark Liberty International Airport.

POPULATION:

125,809

DISTANCE FROM INBOUND LOGISTICS HQ:

16 mi.

Commuting from New Jersey into New York City off and on for 20 years, few things have escaped my writer's eye.

Except the most obvious – one of the largest port complexes in the United States and the birthplace of containerization.

Even after spending thousands of hours sitting in rush-hour traffic, staring blankly out of a commuter bus window at planes, trains, and automobiles crisscrossing New Jersey wetlands, proper introductions went wanting.

When an opportunity presented itself in April 2009 to join the Council of Supply Chain Management Professionals' New Jersey Roundtable for a presentation and tour of Port Elizabeth's APM and Maher terminals, our paths finally crossed.

Port Elizabeth, New Jersey

On the Waterfront

ExpressRail, "the jewel of the port"

In the core of the Big Apple, there's no lack of stimuli. Glass window displays compete for attention with walls of steel. Wall Street's granite facade melts into Broadway's lights. Big ideas receive even bigger media exposure. But the rhythm and flow of the city is dependent on a much larger, albeit less ostentatious, force.

Mere miles from the glitz and the glam, across the Hudson River in New Jersey swampland, sits a gritty big-box port that brings quality and quantity to life in a New York City minute.

The Port Authority of New York and New Jersey (PANYNJ) is a bi-state agency that operates and maintains infrastructure and services – including mass transit, six tunnels and bridges, five airports, and the third-largest marine cargo port in the United States – within the greater metropolitan area.

Port Elizabeth, located in New Jersey, features the port's two largest tenants. APM Terminal's operation is its largest on the East Coast, boasting 350 acres, on-dock rail access, and three deepwater berths. Separated berth-side by a lone linked fence, APM's counterpart is even more imposing. Maher Terminal's facility is the largest in North America in terms of acreage and volume. It's a port within a port. In terms of container throughput, Maher is larger than Norfolk, Montreal, Boston, Halifax, Baltimore, and Savannah, handling more than two million TEUs in 2008, or nearly 50 percent of all container volume moving through the port.

Both facilities play a big role in the port's current and future reckoning. Despite the economic downturn, the PANYNJ only experienced a one-percent dip in container business in 2008, recording 5.2 million TEUs. In comparison, West Coast ports such as Long Beach and Los Angeles saw volume drop by 40 and 32 percent, respectively.

Through September 2009, container traffic has been less robust, with a near 16-percent slide year over year. Still, the port is bullish about the future and the efforts its tenants are making to expand with anticipated demand.

Elizabeth, N.J., is in the middle of a fast-sweeping port boom.

Approaching Terminal Velocity

The approach to Elizabeth from Manhattan offers a "baptism by ire" into New Jersey locomotion. Navigating around the state's notoriously circuitous maze of highways and toll plazas is a test of patience, will, and U-turnability. The brave wing in with a trusty GPS and a heavy foot. Those more or less astute take their chances with an adrenaline-fueled New York City taxi ride that might scare even *Frogger*.

Exit 14 off the NJ Turnpike veers in two directions–one road leads to Newark Liberty International Airport, the other to Port Elizabeth. Like a labyrinthine DC conveyor belt to a lone loading dock, all roads lead to a Port Authority. Finding your way to the marine terminals after leaving the Turnpike is comparatively easy. Left and right, tractors towing 20- and 40-foot containers, others unburdened, scream along as they wend their way to and from Port Elizabeth's docks.

Moving south along Corbin Street, the main thoroughfare into Port Elizabeth, you find yourself surrounded by intermodalism. The marine complex is to the left, the railroad is to the immediate right, then the NJ Turnpike, and beyond that Newark Airport. All around, planes, trains, and trucks make their presence felt, visibly and audibly. Less conspicuous, beyond glimpses of towering candy cane-striped cranes, the maritime drama unfolds.

A Matter of Plumbing

Currently, the PANYNJ holds a 14-percent market share of containers moving in and out of the United States and expects this piece of the pie will grow. At their peak, Long Beach and Los Angeles controlled nearly 65 percent of all container trade in the country, but that number is sliding–precipitously so–as sourcing patterns shift.

PANYNJ is already the third-largest port in the United States, serving the country's most populous region. But infrastructure development and expansion in a major metropolis is not without obstacles. "Infrastructure is a systems issue, it's a matter of plumbing," says Peter Zantal, general manager strategic analysis and industry relations, The Port Authority of NY and NJ.

The port is rooting out inefficiencies to increase and enhance cargo flow. In terms of TEUs handled per acre per year, there is room for greater productivity. PANYNJ is currently at 2,500 TEUs, 500 less than Los Angeles. Hamburg is twice as efficient. One reason for this anomaly is the port's reliance on trucking to move cargo in and out of the area. Only 14 percent of shipments are ferried via rail–and here lies great opportunity for improvement.

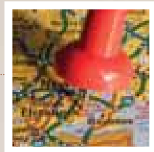
It's why the port has invested $600 million in rail/intermodal enhancements, most notably the Millennium Rail project. The joint venture between APM Terminals and Maher Terminals operates the ExpressRail System, which provides dedicated rail facilities for the port's major container terminals and additional rail support track. Centered between both facilities, the system provides daily double-stack train service between the port and points in the Midwest, eastern Canada, and beyond.

No TWIC, No Entry

Gaining access to the Port Authority of New York and New Jersey in the aftermath of September 11 is no small task. Visiting as part of a tour group makes it easier. But even then, I'm subject to scrutiny.

Approaching the entrance to the APM Terminal, electronic signage blinking "No TWIC, No Entry" captures my attention–and port security has a newly captive audience. The irony is dripping.

The much maligned and delayed rollout of the Transportation Security Administration's Transportation Worker Identification Credential (TWIC) program seizes yet another victim. Even fully documented, tour-bus-trapped logisticians and writers are subject to proper security clearance–and a timely delay until our TWIC-carrying escort arrives on the scene.



An Inside Peek During Peak

The Maher and APM terminals sit side by side along Corbin and McLester streets, with Elizabeth ExpressRail separating the two yards. Entering the APM gate, you pass 29 inbound and outbound truck lanes. Drivers and their tractors queue up to receive pickup instructions and lane assignments from gate clerks. Leaving the terminal, they pass through a 10-point roadability inspection process before transiting a series of iridescent yellow radiation portals.

Moving toward the docks, an out-of-service chassis graveyard passes view, followed by yellow reefer racks, where containers with perishable, temperature-sensitive goods are plugged in to stay cool.

On this day, three ships are in port: the *Maersk Douglas*, *Maersk Kentucky*, and *Hanjin Wilmington*. The terminal is abuzz. Loaded and empty tractors scurry here and there, picking up and toting containers around the yard. "The place is busy today," observes Jamie Shelton, general manager of client services at APM Terminals. "That's good."

The APM yard features 6,000 feet of berthing space in the shape of an "L" on the southeast-facing side of the port abutting Newark Bay. It operates 15 ship-to-shore cranes–including four Super Post Panamax and eight Post Panamax–used for loading and unloading containers from vessels.

Passing underneath these rolling leviathans, and in the shadow of three container-laden ships, you begin to appreciate the size, scope, and scale of their shared endeavor.

The *Maersk Douglas*, for example, which flies under the German flag, stretches 965 feet in length–or three football fields and two holding penalties–and 105 feet in width. It can carry in excess of 5,000 TEUs fully loaded. The Super Post Panamax cranes span 206 feet, or nearly 26 containers across.

As crane operators strip the *Maersk Douglas* of its enormous weight, the "hard hat only" signs seem blatantly obvious. The dock is a hive of activity, a constant whir and blur of tractors letting go of chassis, straddle carriers confronting containers, and cranes hoisting boxes. Bob-tailing hustlers, bomb carts, straddle carriers, tractors, and rolling gantries hurtle in and out of moving containers and neatly stacked hatch covers.

These types of containerships have an eight- to 12-hour dwell time on average, sometimes longer depending on the mix of imports and exports, explains Shelton. Historically there is a 70/30 percent break between incoming and outgoing cargo at the terminal.

Moving past dockside, where workers are re-stenciling and painting *Maersk Kentucky's* name, you see the Millennium Rail project up close and personal. Sandwiched between the APM and Maher terminals, the ExpressRail spans 45,000 feet, includes 18 tracks, and is served by four railroads–and two primary Class I's, CSX and Norfolk Southern.

Greater productivity partly predicates the port's future container volume growth, so rail/intermodal accessibility is a competitive differentiator. "If you make the port more efficient, make it easier to get

Business As Usual… Sort of

It's difficult for me to see any obvious signs of a recession at the port. To an untrained eye, the Maher yard is abuzz with activity: ships are loading and unloading containers; straddle carriers, gantry cranes, and tractors are in full operation. But Ivo Oliviera of Maher Terminal points to signs of another reality. Densely stacked containers in one area of the yard are an ominous reminder of the current economic climate. They're empty–and a buildup of empty boxes can clog the terminal and impact efficiency.

Another clue is anchored berth side. *The MSC Caracas* is completely stripped of its cargo, which is uncommon. The vessel is loading empty containers to reposition elsewhere.

On the Waterfront

Straddle carriers and gantry cranes, Maher Terminal

in and out of, that makes it more competitive," says Zantal. "We did not expect rail traffic to ramp up so much so fast. Rapid growth has largely been attributed to high fuel costs, concentrated cargo, and more hinterland traffic."

Building for a Container Boom

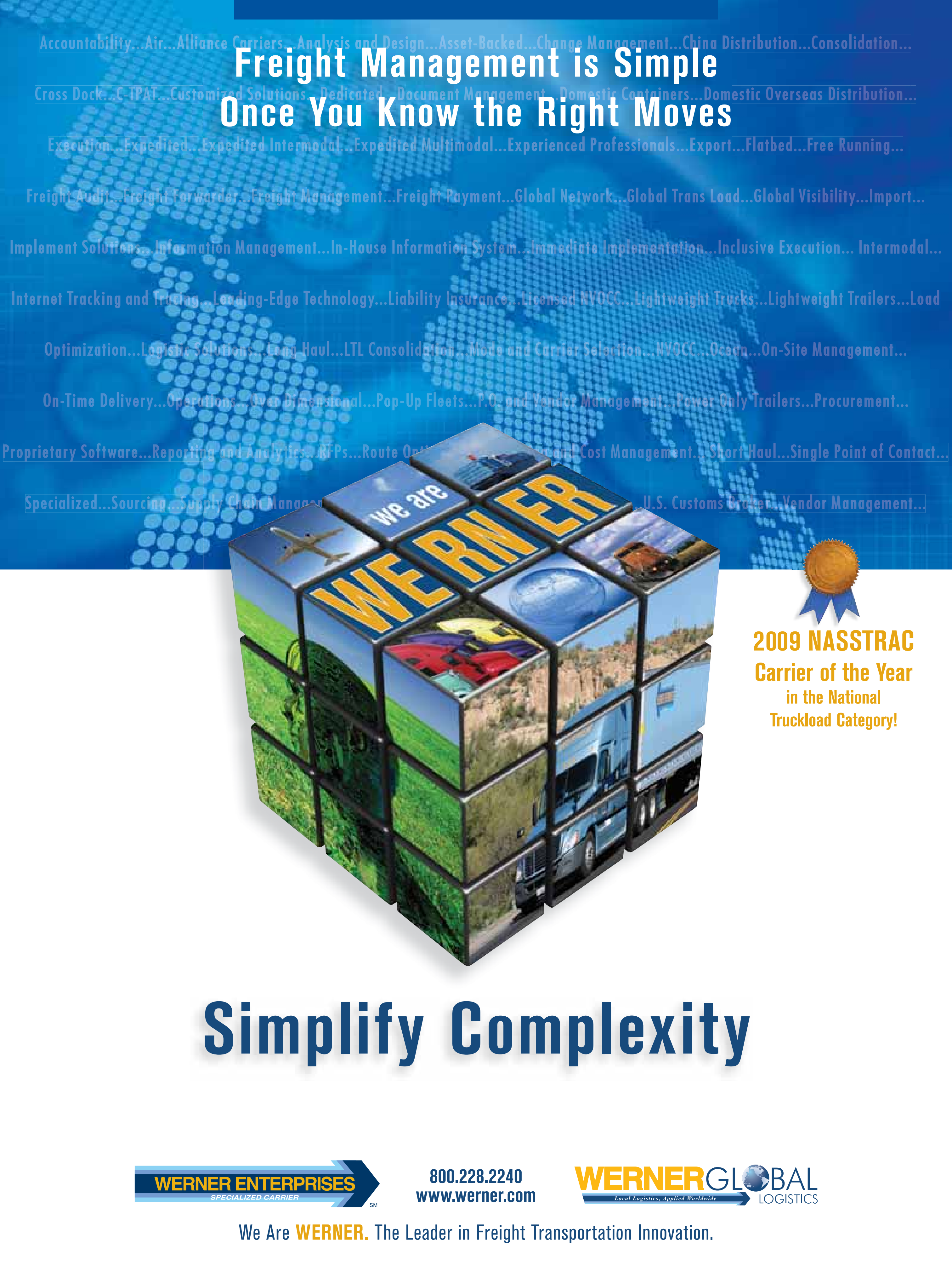
Next door at the Maher terminal, lunch hour is passing and the pace of movement is picking up. The facility's administrative building lies on the west side of the terminal, near the entrance gate, surrounded by layers of fencing. The building stands alone. Its boxy, monolithic profile dwarfs the islands of containers scattered elsewhere around the 445-acre yard.

Maher's office is important for another reason. It's the original headquarters of Malcom McLean's SeaLand business–the company that gave containerization and the port a name. "Many global container terminals were conceived in this building," says Ivo Oliveira, vice president of Maher Terminal. "If walls could talk."

The main truck entrance features a five-lane canopy equipped with laser scanning technology and cameras that snap multiple images of equipment while intuitively weighing stock as it rolls through. During this process, the terminal is able to recognize that a container has arrived and identify the ship and destination port where a specific box is bound. Instructions are placed in a queue and directions are conveyed to truck drivers and straddle carrier operators. All this happens in a matter of seconds, explains Oliveira. Eventually the terminal will move toward virtual, unmanned lanes. On an average day, Maher will process up to 7,000 trucks.

Along the 10,000-foot berth, which can accommodate nine container ships contiguously, the *MSC Dartford* and *MSC Scotland* are in various stages of unloading. Super Post Panamax and Post Panamax cranes sit on 100-foot gauged rail so that operators 130 feet up can maneuver the equipment. Maher Terminal operates 180 straddle carriers and 16 cranes, which are capable of handling the largest containerships. "The booms extend forever," observes Oliveira.

Compared to the APM yard, where truck lanes converge into pyramidical cathedrals of stacked containers, Maher's yard is much less cluttered, more dispersed. Case in point, Maher Terminal has reefer container capacity for 1,000 boxes, which is quite large, but it uses a straddle grounded system as opposed to denser reefer racks. Apart from having greater acreage, Maher has made the transition from high-density stacking because it serves a heavy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Cross Dock...C-TPAT...Customized Solutions...Dedicated...Document Management...Domestic Containers...Domestic Overseas Distribution...
Execution...Expedited...Expedited Intermodal...Expedited Multimodal...Experienced Professionals...Export...Flatbed...Free Running...
Freight Audit...Freight Forwarder...Freight Management...Freight Payment...Global Network...Global Trans Load...Global Visibility...Import...
Implement Solutions...Information Management...In-House Information System...Immediate Implementation...Inclusive Execution... Intermodal...
Internet Tracking and Tracing...Leading-Edge Technology...Liability Insurance...Licensed NVOCC...Lightweight Trucks...Lightweight Trailers...Load
Optimization...Logistic Solutions...Long Haul...LTL Consolidation...Mode and Carrier Selection...NVOCC...Ocean...On-Site Management...
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truck market. The best way to service trucks is by using straddle carriers. It's a matter of direct transfer rather than concentrated and aggregated transfers, explains Oliveira.

But if the future is any indication, and as the port explores better means of improving velocity, the joint venture Elizabeth ExpressRail will grow more popular as a conveyance for moving containers on and off port. "We're trying to accommodate a coming cascade of larger ships into this side of North America. On-dock rail is the jewel of the facility. I cannot stress its importance enough," Oliveira adds.

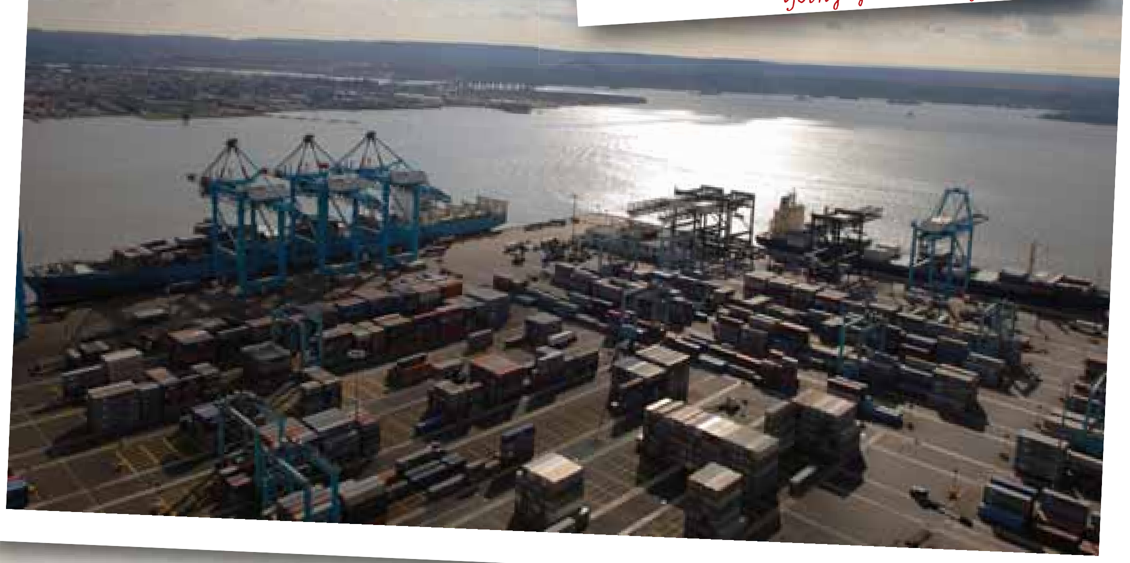
Building a Bridge to the Future

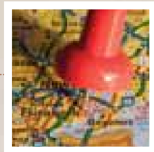
As the economy rebounds, the West Coast port conundrum and concerns about capacity, congestion, and infrastructure will likely regain currency. U.S. container trade dominance is beginning to shift its equilibrium away from the west as Asia-origin volumes wane, global sourcing paradigms shift, all-water services through the Panama and Suez canals strengthen, and U.S. Gulf Coast and East Coast ports ratchet up capital investments.

The PANYNJ and its tenant partners have made great strides investing in the future. But as you look across Newark Bay from the APM and Maher terminals, past container-laden Goliaths, and in the shadow of Gotham's steel spires, the port's greatest obstacle sits inconspicuously on the horizon–the Bayonne Bridge.

To the port, the bridge is anachronistic, a symbol of the past, of pre-containerization trade. But it


Going up or coming down?

APM Terminal, Newark Bay, and Bayonne Bridge




is still hugely relevant for modern-day transit. The span stretches across the Kill Van Kull and ferries more than 20,000 vehicles a day between Bayonne, N.J., and Staten Island, N.Y. Constructed in 1931, the Bayonne Bridge's 151-foot air-draft (the distance from the water's surface to the underside of the bridge roadway) is a major limbo stick for growing containerships.

"Maher Terminal is ready for the future," says Oliveira. "The problem will be getting boxes past the Bayonne Bridge."

That challenge will be exacerbated when the worldwide fleet of Super Panamax and New Panamax containerships comes online with the completion of the Canal's expansion.

In 2008, the Port Authority commissioned the United States Army Corps of Engineers to complete an audit of the commercial consequences and benefits of fixing the Bayonne Bridge's air-draft restriction. It reported that modifying or replacing the bridge could cost $3.1 billion and take 10 years or more to complete. Now, PANYNJ is spearheading a $10-million study to determine a preferred course of action.

Ongoing analysis is evaluating a variety of solutions that would accommodate new vessels and container volumes. But the Port Authority and the Maher and APM terminals are at an impasse over the overpass as engineering and environmental due diligence take their course. For Oliveira, it's a matter of simple logic.

"As soon as the Bayonne Bridge comes down, or goes up, we'll be poised to handle these new ships." ■

Traffic is as unpredictable as ever on my daily commute. The flashing landscape that passes by my window does little to shake the ennui. But glimpses of container cranes suspended over Newark Bay and a forsaken bridge welcome new knowledge.

Port Elizabeth is thoroughly New Jersey. It has an exit off the Turnpike, the accents are thicker, and you can't help but think The Boss would feel right at home on the docks.

It's also thoroughly *Inbound Logistics*. What happens every day at the APM and Maher terminals is the pulse to my monthly beat. Port Elizabeth is where demand and supply connect, where modes come together, and where the past and future of maritime trade are converging.

The port will always be cast in the light of Malcom McLean's SeaLand adventure and the birthplace of containerization. And yet, ironically, it is a looming shadow from that shared past – the Bayonne Bridge – that is boxing in future plans.

Port Elizabeth isn't alone. This tension exists elsewhere around the country where new transportation demands are raising old infrastructure problems. But the port and its tenants are moving the needle in another way.

Port officials are convinced the Millennium Rail project will do wonders for improving hinterland connectivity and container throughput. They believe it's one solution to managing growth. You also get the impression that terminal operators and government will confront the challenge of re-engineering the Bayonne Bridge with equal determination. That's thoroughly New Jersey, too.

Visions of an Aerotropolis

DESTINATION:

Piedmont Triad, North Carolina

LOCATION:

The region encompasses 12 counties in north central N.C., including the cities of Greensboro, High Point, and Winston-Salem.

POPULATION:

1.5 million

DISTANCE FROM INBOUND LOGISTICS HQ:

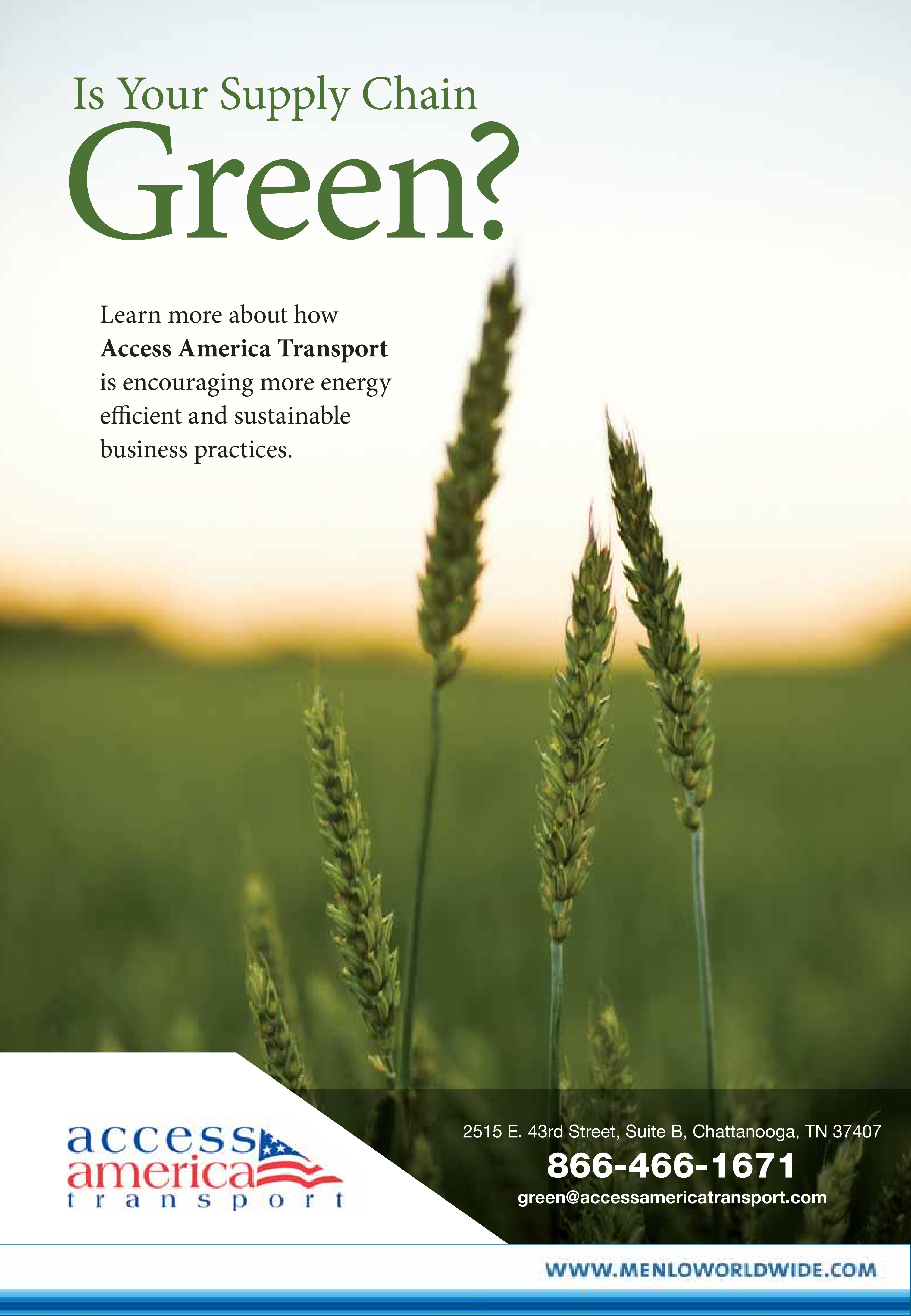
561 miles

In May, the Piedmont Triad Partnership invited me to join a press tour of the area.

We visited several manufacturing and distribution facilities, and Old Dominion Freight Line's headquarters, but the Piedmont Triad International Airport (PTIA) was the focal point. From my initial arrival to our final stop at the new runway and FedEx Mid-Atlantic Air Hub, conversation generally orbited around plans for an Aerotropolis.

The word itself, and the vision it conveys, has an almost futuristic subtext – a "Jetsonian" utopia in my cartoon-cluttered mind. But as I learned, the concept is more grounded than that. Air freight and FedEx are the magnets that build attraction, but warehouses, trucks, and manufacturing are the bearings that will make this vision real.

Things are looking up in the Piedmont Triad.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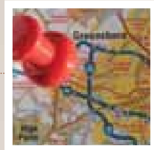

Build it and They Will Come

North Carolina is popularly recognized in two ways: as the Tar Heel State and First in Flight.

Both labels bear proof of North Carolina's rich history as a center for manufacturing and transportation. Flying into Piedmont Triad International Airport, located in the North Central part of the state, these influences quickly emerge.

From above, a patchwork pattern of open spaces and heavily wooded tracts points to the state's well-rooted timber industry. You can almost imagine early pioneers clear-cutting old-growth forests, firing their kilns, extracting pine pitch, and tarring their heels in the process. Eventually a vertical was born, paving the way for pulp, paper, textile, furniture manufacturing, and a host of other industries.

If the marvel of flight and North Carolina's role in its ascent doesn't immediately grab your attention, passing license plates emblazoned with "First In Flight" will. Thanks to the Wright Brothers and a breezy testing ground in Kitty Hawk, forested enclaves soon heard the buzz of planes flying overhead.

Today, the buzz over Greensboro, Winston-Salem, and High Point is no less striking. The debut of the FedEx Mid-Atlantic Air Hub in June 2009 – a nearly one-million-square-foot sorting facility adjacent to the airport – and the projected completion of a 9,000-foot-long runway at PTIA have imaginations soaring. Local businesses, government, and economic development agencies

Liberty Hardware DC, with a fine shammy

A Clean Sweep

Liberty Hardware is proof-positive of the Piedmont allure. The cabinet hardware and decorative home furnishings supplier relocated to Winston-Salem in the 1980s to be closer to the region's established wood furniture industry. Two decades in, and despite outsourcing's grip on North Carolina furniture manufacturing, Liberty Hardware is thriving.

Walking around the company's 680,000-square-foot distribution facility, I am struck by its sterility. Its floors are immaculately clean. The sheen from the overhead lights is glaring. The only pollutant is the hum of fans and the whir of automated guided vehicles and conveyors flowing product about. The DC's sorting operation has the look and feel of a baggage claim carousel–except faster and without that nagging feeling of "maybe, maybe not."

Colors abound. Red stripes, green racks, and yellow columns liven up industrial grays. Yet, oddly, it is the blue shrink-wrapped pallets that capture my attention. Why blue? Because it grabs attention, visually differentiates product, and reduces claims.

Liberty Hardware takes cleanliness, efficiency, and safety seriously. Housekeeping ranks right up there with on-time shipping, says Tom Turner, vice president of global logistics.

Looking up at the banners hanging from the rafters – "Don't Take Chances with Safety" and "100% Complete, Accurate, On-time" – Turner's words resonate.

The point is crystal clear.


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ON THE SHOULDERS OF
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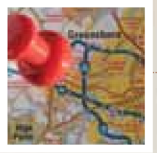


have grand plans for building an Aerotropolis that will define the future of the region.

All Things Being Different

Wood product manufacturing and aviation aren't the likeliest of pairings–at least not since the days of the Wright Brothers. But with a little imagination and design, their complements materialize.

North Carolina's economic development advocacy is taking a similar approach by leveraging the state's diverse resources to market its differences.

"Each region of North Carolina plays its own important role," shares Don Kirkman, president and CEO of the Piedmont Triad Partnership. "We don't have a monolithic statewide economy. The coast has tourism; Piedmont Triad has manufacturing, transportation, and logistics. The Research Triangle has R&D and life sciences; Charlotte has a financial services sector."

Now both businesses and government are looking to expand North Carolina's transportation capabilities and use them as a means for tying these clusters together.

"Transportation and logistics transcend the economy in terms of producing and moving goods," says Kirkman. "It allows us to recruit new business over a number of core areas."

The debut of the new FedEx hub and plans for a web of manufacturing, distribution, and logistics infrastructure around PTIA will make the area a keystone for the state economy. The idea for an Aerotropolis is contingent on multiple forces. FedEx will bring business because of its brand, but the build-out of supporting resources and services is equally important.

"Major players come with a sophisticated need, which, in this case, is air freight," says Ted Johnson, executive director of Piedmont Triad International Airport. "But it wasn't our pretty faces that attracted FedEx. Good roads are important, too."

In many ways, the Triad's agribusiness legacy has created a foundation for attracting vertical industries and driving transportation infrastructure development. Now the latter is returning the favor and the metamorphosis is already underway.

Honda Motor Company is building its new aircraft subsidiary at PTIA, with plans to manufacture its HondaJet nearby. "Not every component used to build that plane will be manufactured in Piedmont, so Honda will be challenged with getting parts here on a timely basis," adds Johnson.

That's why Honda and other companies sourcing mission-critical parts are locating near the hub. But even for non-traditional airfreight shippers, the promise of an Aerotropolis has a huge upside because

Shades of Blue

At a welcoming reception sponsored by the Piedmont Triad Partnership, I find myself reaching beyond the Swedish meatballs for a way to introduce myself to a collection of local transportation and logistics luminaries. As a writer, it's rare that I find myself at a loss for words. But in public it's different.

After a series of fumbling handshakes and mumbled introductions, I ditch logistics and go straight for the familiar–college basketball.

"So, are you a Blue Devils or a Tar Heels fan?"

The reaction is immediate and charged. Quickly I learn the nuances of the Duke/UNC rivalry. Feeling confident, I go with the flow, pick up some nerve, and toss out my next question.

"How do you feel about the per-mile tax that has been pitched as a revenue source for North Carolina infrastructure projects?"

Apparently I know how to smother conversation as quickly as I can kindle it. Back to basics.

"So, what about Davidson...where do they fall in the pantheon of Carolina basketball?"

Piedmont Triad, North Carolina

Visions of an Aerotropolis

Piedmont Triad International Airport, the budding of an Aerotropolis

it will attract more business to the area–business that will demand multimodal transport and specialized logistics capabilities well beyond the airport.

Blazing New Paper Trails

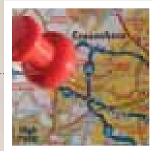
As a paper buyer, Carson-Dellosa Publishing falls a few rungs down the wood industry's evolutionary ladder. Three years ago, the educational publishing house located its headquarters and primary U.S. distribution center in Greensboro, largely due to its proximity to East Coast and Midwest markets, but also in anticipation of the new FedEx hub.

"The paper industry is not generally time-sensitive," says Rich Lugo, vice president of operations, Carson-Dellosa. "A one-day difference in transport doesn't warrant extra expense. But having options is nice."

The publishing company generally uses truckload and less-than-truckload (LTL) to manage its direct-to-dealer business. But in the summer, customer needs change. The ramp-up to the school year brings a corollary jump in direct-to-consumer business as tardy teachers requisition supplies–which demands more expedited shipments.

With the opening of the FedEx hub Carson-Dellosa can take orders at 2 p.m. and ship by 6 p.m. the same day. This offers greater flexibility in fulfilling time-sensitive West Coast orders, and Lugo anticipates pushing that dial even further to serve customers better.

Economic conditions also contributed to greater demand for expedited services. Dealers are handling inventory differently, and Carson-Dellosa's LTL



shipments have dropped 40 percent.

"Dealers are buying in greater volume or ordering less, then expediting to fill flow," Lugo explains. "Some dealers don't want more inventory than they can sell, so they are not buying more than they need. Instead of ordering a box of books, for example, they might buy four books and choose second-day air. It has become more of a replenishment set-up."

Carson-Dellosa is heavily product-driven, so demand sensitivity and responsiveness is critical to delivering the best customer service. "We used to fall 10 days behind shipping orders," he adds. "Now, with our direct-to-consumer business, it's 24 hours. We're bringing service along with good product."

Onward and Upward

Out on the tarmac, you can appreciate the scope of PTIA's expansion project. Core samples stick out where lights will be planted along Runway 5L/23R, the 9,000-foot-long strip under construction to support the FedEx operation. The newly paved, coal-black ribbon of road lies amid reddish clay soil deposits that have been pushed about during the grading process. The runway waits for direction – the lights, lines, arrows, and signage that will guide freighters to and from the hub.

For airport officials, that direction has already been drawn out. The planning and construction of the FedEx hub has been a decade in the making, so anticipation is palpable.

Driving into the new FedEx facility, you feel that tide shifting, seismically so. But you wouldn't know it by the looks of things. A lone security guard seems overburdened by boredom as he dutifully inspects credentials. There is no one else around.

The boxy, off-white behemoth of a building dwarfs everything else around. It is nondescript except for a large FedEx logo on the airport-facing side. Inside, workers are likely fine-tuning the machinations that will help sort up to 24,000 packages per hour.

Outside, the hub is vacant. A few trucks linger but no airplanes are waiting in queue. It's eerily quiet and devoid of movement. But it won't stay that way for long.

You can imagine the pent-up energy and purpose ready to engulf this space, like a stock exchange before the bell rings. It's just a matter of time.

And that time is now. The Piedmont Triad's past and future are aligning as grass-roots industry and transportation innovation reveal a new root and route for economic development. The Tar Heel State is in full flight. ■

The day before I arrived in Greensboro, I was winging my way back from Northern Ireland, with a connection through London Heathrow's labyrinthine terminal. This time, fortunately, my luggage joined me in Newark. Flying into Piedmont Triad International Airport (PTIA) was a welcome reprieve. Regional airports tout accessibility and convenience as primary strengths, and PTIA is no different.

The objective of the Aerotropolis is to apply that same model to the cargo side of the business – to offer complementary modes, infrastructure, and services that facilitate product movement in and out of the region.

The expediency of air freight is a given. But the ability to maintain product flow and velocity is contingent on other factors. First- and last-mile delivery to and from the airport is important, as is adequate road and rail infrastructure. Foreign trade zones and bonded warehouses, technology and third-party logistics service providers, can help manage regulatory compliance and ensure timely transshipment. All these pieces will be part of the Aerotropolis.

The King of Beer Distribution

DESTINATION:

Nashua, New Hampshire

LOCATION:

2nd-largest city in N.H., located in the southeast corner of the state

POPULATION:

87,000

DISTANCE FROM INBOUND LOGISTICS HQ:

233 miles

Family and business mix about as well as conflict and resolution.

Often one is a consequence of the other. That makes exceptions to the rule all the more remarkable.

I found myself in an exceptional position when Bellavance Beverage Company, a family-owned Nashua, N.H., beer distributor, became a destination on my itinerary. No less extraordinary, my site visit was the direct result of an *Inbound Logistics* "kin-ection."

IL's Print/Web Production Manager Shawn Kelloway was my gatekeeper to the Bellavance family business – as well as photographer and wickedly awesome interpreter in "the 'Shua."

In ethnography, local knowledge is a powerful tool. It opens doors and closets suspicion. To get inside Bellavance's distribution facility and gather privileged insight from Sam and Joe Bellavance was truly remarkable – without exception.


"The best Balance
between Time and Cost"
GEODIS
wilson

Nashua, New Hampshire

The King of Beer Distribution

When you've been in the beer distribution business for 108 years, there's no want for nostalgia. In fact, legacy is a calling card, the family name a revered brand. That's the impression you get visiting the Bellavance Beverage Company in Nashua, N.H.

In Bellavance's lobby, sepia-toned prints reach back in time to horse-drawn carriages, wooden kegs, and buzzing saloons–to when its story begins. In 1902, Joseph A. Bellavance hitched up his wagon and started a beer and liquor wholesale business in downtown Nashua. During the Prohibition era, the company survived by peddling soda and hand-rolled cigars. Then, when The Noble Experiment tanked, Bellavance turned its attention strictly to beer. By 1954, it had acquired distribution rights for Anheuser-Busch products in the Nashua area.

Just as quickly as time elapses out in the lobby, inside the office, halls decorated with Boston Red Sox and New England Patriots memorabilia bring the story immediately into the present. Over the past few decades, brothers Joe III and Sam Bellavance have been the custodians of the business their grandfather built. They still play key roles in the company as chairman and vice president, respectively. But now they, too, have passed the reins to their sons.

Today, the fourth-generation, family-owned business is one of five Anheuser-Busch InBev wholesalers operating in New Hampshire, delivering more than three million cases of beverages each year to local grocery chains, convenience stores, and restaurants.

In 2004, Bellavance relocated to a new 79,000-square-foot warehouse and office space to accommodate business growth. Approaching the facility, nestled at the end of a quiet cul-de-sac surrounded by thick groves of sweet-smelling pines and manicured lawns, you immediately know where you are. The entrance is marked by a "BBC" totem emboldened below with Anheuser-Busch's "A and Eagle" brand. In the parking lot, license plates are bolder and less subtle: BUD4YOU, BUDWISR, BUDMAN, and LOU-P.

First appearances always leave an impression. But like a bottle to its beer, the outside is merely vanity–it's the inside that really counts.

The Bellavance clan: Sam Jr., Sam, Joe III, and Joe IV


If your business is about well-oiled machines—
your warehouse should be, too.

Nashua, New Hampshire

The King of Beer Distribution

Manic Mondays

On a Monday morning, the Bellavance warehouse is a flurry of activity. Electric-powered forklifts hum in and out of racks stacked with countless brands of beer in equally variable configurations: six-packs, 12-packs, 18-packs, 30-packs, and a mix of both cans and bottles. Case-packed pallets in various stages of wrap sit in the middle of the warehouse as drivers and supervisors mill around.

The main 50,000-square-foot warehouse space is bright, airy, and cool. Monitoring climate control is important as season-to-season variances, both inside and out, can pose problems. For example, the warehouse can't be too cold in the summer or the cardboard packaging falls apart in the humidity, explains Sam Bellavance. A refrigerated draught room – filled with half barrels, quarter barrels, and "sixes" – is located in a recess off the main warehouse. It is always kept at 34 degrees.

Because Bellavance is closed on the weekend, Mondays are manic. It's the only time during the week when loads aren't built the night before, so salespeople are busy calling in orders and drivers scurry around, picking product from the racks and building pallets. When drivers finalize their loads for outbound delivery, checkers compare pallets with invoices to ensure accuracy. Complete loads are then shrink-wrapped and positioned for delivery on one of Bellavance's 21 trucks.

To help workers speed the flow of inbound and outbound inventory, the warehouse is separated into two different sections. "It's divided between holding racks, vertically categorized with different cases of canned and bottled beers, and supply stock that builds up as new product comes in from the brewery or its off-site DC," says Sam Bellavance.

Racks, too, are set up in specific patterns so drivers know where to go to build their orders. The system operates much like a soda vending machine. Pickers pull SKUs from the racks to build daily loads and the mountains of neatly stacked floor stock on the other side of the warehouse are used to replenish the racks as demand dictates.

This U-shaped distribution flow flexes with inbound and outbound shipments. Bellavance pulls about seven to 10 trailers a day from the brewery and another DC. Tractors come in, unhitch trailers to offload,

In the refrigerated draught room it's always 34 degrees

Bellavance and Budweiser, perfect together


Heineken…it's all about the beer

pick up empties, then return to the brewery for another trailer. Because Anheuser-Busch InBev's Merrimack production facility is located nearby, the distance and time it takes to move assets and inventory is negligible.

The distributor also frequently sources product from overseas, especially after Belgian brewer InBev's acquisition of Anheuser-Busch in 2008. "The increase in import draughts makes it easier for us to compete in the trade," says Sam Bellavance.

But it brings challenges, too. A typical container holds about 300 kegs and Bellavance rarely has enough demand to command a full box. So it shares space and costs with other distributors.

"We bring in one weekly container full of Heineken from Boston. We also import Stella, Becks, and Bass, among others. We split loads with other wholesalers on low-selling beer," he adds.

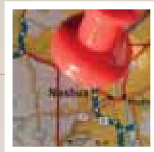
Bellavance is also responsible for returning barrels to point of origin, so it stores them in the warehouse until there are enough to fill a container and ship back. "A lot of money is tied up in these empty barrels, especially if you consider they may only turn over three or four times a year," Sam Bellavance explains. "We have to account for all assets in the system because we get charged $55 a barrel for each short unit. So we keep track of them."

A True Taste Test

The wholesale beer industry is all about rotation–in the warehouse and on retail shelves. Making sure older, but still-good beer moves first is important, so Bellavance drivers and salespeople are especially vigilant when visiting customers and checking inventory.


Market Basket… where tastes collide


Stacks of Bud just in case



Nashua, New Hampshire

The King of Beer Distribution

It's All About Promotion

Like peanuts and pretzels, beer goes well with knickknacks and sports, too. As a distributor, Bellavance supplies drink promotions, menus, printed banners, and an assortment of other marketing gimmicks to its customers.

Walking through Bellavance's point-of-sale (POS) room, I find a treasure trove of booty. Some, like beer coasters, are very familiar; beer draught knobs are more obscure. Balloons, posters, napkins, serving trays, and countless other "things" branded with names such as Peak Organic, Beach Bum, and Hook and Ladder capture my eye. Like a kid in a toy store without an allowance, I touch and feel everything.

Then I see toys. Bars and restaurants often feature special promotions throughout the year to attract customers and business. In one corner of Bellavance's POS room, shelves teem with seasonal game promotions: hockey nets; flick football parts; ping pong balls; a rock, paper, scissors game; and a multitude of other paraphernalia.

In the beer business, sports and swag sell. And what Bellavance gives, it receives in equal spades. Employees get their fair share of free apparel, from the looks of things. Walking around the office, I see employees casually dressed in golf-purposed polo shirts branded with various beer logos.

I think, where else in the workplace do you see golf, Polo, and Bud Light threads converge so agreeably?

Driving along Amherst Street, a commercial strip northwest of downtown Nashua dotted with chain restaurants and industrial parks, you have to try hard to miss a Market Basket supermarket. Within a three-mile stretch there are three stores. The full-service New England grocer is among the many local chains Bellavance delivers product to.

In store #39, aisle #18–Market Basket's imported and domestic beer section–Bellavance's presence is all around. A large banner hanging from the ceiling reads, "Welcome to Market Basket's Beer and Wine Department." The signage was designed and printed by Bellavance's in-house marketing department.

A wide assortment of floor stock is neatly stacked in a mid-aisle island, hemmed in on one side by refrigerated beer displays, and on the other by shelves of room-temperature product. Market Basket sells every type of brand, in every size, quantity, and packaging you can imagine. Six-packs and cases, and all counts in-between, are stacked horizontally and vertically. Familiar long-neck Bud Light bottles and tubby 24-ounce keg cans of Heineken compete with exotic names such as Ipswich Mix, Shoals Pale Ale, and Magic Hat.

Beer is the only product grocery stores sell where the manufacturer does not pay for shelf space. "It's a free market, and the wholesaler positions products according to supply and demand," says Sam Bellavance. The wholesaler helps by drawing up CAD-like schematics for how the store should organize product in its display cases.

In the past, chain stores employed beer managers to keep track of inventory and place replenishment orders–but that is no longer the case. In the store, Bellavance's salespeople, merchandisers, and drivers manage the inventory and work together to rotate beer so the freshest product is in back and older beer is in front.

"The whole business is built on trust. Customers establish a baseline volume of inventory they need for the week, and trust us to control it. The volume varies week-to-week, but day-to-day orders are generally standard," Sam Bellavance adds.

Mom-and-pop shops generally want more control over inventory, but larger customers leave that

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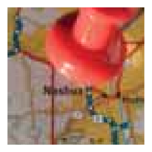

Nashua, New Hampshire

The King of Beer Distribution

Where Everybody Knows Your Name

Joining Sam Bellavance for a lunchtime diversion at Applebee's offers a fresh appreciation for the role of customer service in the beer distribution business–as well as New England culture.

Walking into a distinctive Bostonian chorus of "Hello, Sam!," I feel like I've seen this on television before. There's a friendly bartender–a family acquaintance–and a local Scot who greets me with "Cheers!" as I sample the restaurant's Kona Longboard Island lager. Applebee's is a Bellavance customer, so Sam is a familiar face. Conversation is friendly and local. Another patron joins our crowd, another friend.

It's the same everywhere we go. In the Market Basket grocery store, employees greet Sam by name, and he responds in kind.

As one of Nashua's oldest companies, and supplier to many of the city's food establishments, engaging customers and the community is part of the job. Bellavance has built its business on a foundation of customer service and trust.

That's why Bellavance has thrived for well more than a century–and why everyone knows Sam's name.

to Bellavance. The wholesaler restocks product twice a week, on Monday and Friday, at most of its chain customers; smaller stores take deliveries once a week. For larger accounts, salespeople visit every day to keep track of what is selling and what isn't.

"The salespeople control their own demand and inventory needs. It keeps customers lean because they aren't sitting on old stock and eating costs," he explains.

Pallets for unique palates

Beyond making sure customers have inventory on hand, Bellavance's greatest challenge is keeping product fresh. It's a policy that drives the industry from production to distribution to sale.

Anheuser Busch pioneered "born-on" dating in the mid 1990s as an inventory management, quality control, and marketing tool. "Beer is held to very tight standards, stricter than the codes for milk," says Sam Bellavance.

For Bellavance, the primary objective is to ensure out-of-code beer is removed from the supply chain–and that generally means product that is more than 105 days old. It's a strict rule that Anheuser-Busch InBev adheres to. Wholesalers can lose their distributorships if they fail to comply. So Bellavance carefully monitors and inspects store stocks to confirm product meets these requirements.

Customers often want to order larger quantities at volume discount, which means the wholesaler has to be particularly diligent keeping track of beer and holding customers accountable. When beer is out of date, salespeople and drivers bring it back to the facility, where a third-party service provider removes and dumps the product.

"Salespeople are responsible for their accounts," explains Sam Bellavance. "If they pick up old beer,

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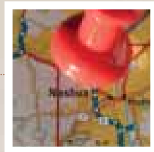


the buyer pays for it. If buying in volume becomes a problem because customers can't sell it, we won't sell to them. We have to be vigilant. We have to protect our product and brand."

Imports have fewer restrictions because preservatives are added to ensure quality isn't compromised during transport. Their shelf life can extend up to one year. For domestic beer, Bellavance usually carries about one month's worth of inventory in the warehouse, and sticks to a first-in, first-out system for pushing product through. If beer dwells for 45 days, the distributor has to report it to the brewery before it moves.

Flexing to Demand

Tuesday mornings in the Bellavance warehouse are markedly less chaotic. Loads for the day's deliveries are built the night before and trucks leave the facility early in the morning. After the rush, a peculiar silence swallows the space.

A few employees stir about, positioning inventory and unloading a trailer that just arrived from the brewery. Blocks of floor stock that towered over the facility on Monday have eroded noticeably in 24 hours. As the week elapses, these cathedral-like aisles slowly collapse, feeding racks ready to fill the next day's orders. Then the cycle begins all over again.

Beer distribution is all about managing ebb and flow. Bellavance's distribution footprint allows it to scale up and down as seasonal demands vary or as new products come online. Still, the business is very much demand-driven. The distributor's sales force and truck drivers work in overdrive to understand the customer's preference, the retailer's need, and the brand's appeal. Then, Bellavance's warehouse flexes with, and delivers to, these demands. ■

The wholesale beer industry is unique because it's countercyclical and demand is generally uniform. While manufacturers such as Anheuser-Busch InBev have felt the impact of the economic downturn, wholesalers have been more insulated. Patrons may frequent establishments less often in favor of home consumption, and therefore spend less, but Bellavance reaches the end user through one channel or another. I saw this firsthand – at Applebee's and in Market Basket.

The industry is not without its challenges, however. As much as consolidation plays a key role inside the warehouse, it's changing the manufacturing and distribution landscape, too. Anheuser-Busch InBev and Molson Coors Brewing Company are among the most recent and notable mergers and acquisitions in the United States. Contraction has been equally rampant in the wholesale space.

When Sam Bellavance started in the business, 22 wholesalers operated in New Hampshire. Today there are seven – Anheuser-Busch InBev has five; Molson Coors operates the other two.

Distributors grow by winning new beer contracts and acquiring other wholesale business. It's the nature of the game. But being a local link in a global supply chain requires an understanding of customer tastes and an appreciation for the brand – the reputation and quality it stands for.

That's why for global and domestic beer manufacturers and Nashua retailers – large, small, and in between – Bellavance strikes the perfect balance.

Plastics, Pellets, and Pallets

DESTINATION:

Morris, Illinois

LOCATION:

60 miles southwest of Chicago

POPULATION:

13,800

DISTANCE FROM INBOUND LOGISTICS HQ:

823 miles

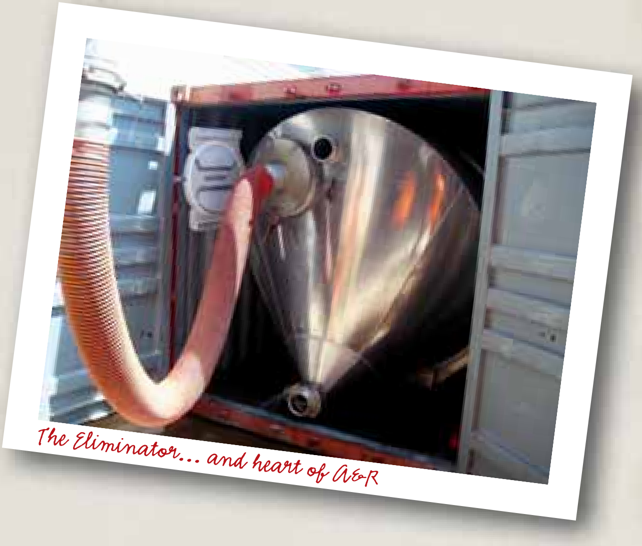
I had some inside information when I made arrangements with Jeff O'Connor, president of A&R Logistics, to visit its Morris, Illinois terminal – namely from IL publisher, Keith Biondo.

Keith had visited the intermodal facility earlier in the year and was so impressed with the operation that he suggested I include it in this article.

So my motivation was twofold: first, I was curious to see a business and facility so tied to a unique commodity – plastics – and with all the modal pieces in place; second, when the boss makes an unsolicited suggestion, you follow instructions first and ask questions later.

Morris, Illinois

Plastics, Pellets, and Pallets



The Eliminator... and heart of A&R

Look around. Within physical or visual reach is likely some type of plastic. You may find a polypropolene blend, for example, in your car's cup holder or coffee maker's carafe basket. Polyethylene terephthalate, commonly called PET, is a thermoplastic used in manufacturing bottles.

For all the things that exist in the world, there are as many permutations of plastics, polymers, and resins, in powder, flake, and pellet form. You'll find as much, and more, in any number of drytainers, hopper cars, trailers, Gaylord boxes, and intermodal containers at A&R Logistics' Morris, Ill., terminal and headquarters.

As a dry bulk specialist, A&R Logistics earned its stripes hauling plastics. The brainchild of CEO James Bedeker began in 1969 with three trucks, transporting product to and from LyondellBasell's Equistar petrochemical plant–located within sight of the Morris facility. The carrier eventually began adding assets to the mix–first warehousing, then rail.

Today, A&R Logistics operates three domestic divisions including transport, global, packaging and warehousing, and manages a fleet of 820 tractors, 1,770 dry bulk pneumatic trailers, 10 warehouses, and 23 terminals across the United States.

The company has ventured into other dry bulk business such as grain, soybeans, corn, sugar, olive oil, and slag. It has expanded its value-added resources too, notably in warehousing. But when the light of day illuminates the darkened depths of a dry bulk tank, there's no doubt. A&R is plastic to the core–down to the very last pellet.

Plastic Irony

It's amazing how a moment's glance can take your mind spiraling through a supply chain. Seeing sample jars filled with different colors and variations of plastic pellets, powders, and flakes commingling with a bottle of spring water on A&R Logistics' boardroom table says it all–source to shelf in a split second.

I'm struck again in the warehouse as I watch plastic pellets pour into plastic bags–and raise my plastic pen to put that observation to paper. A mental photograph is worth an immeasurable number of words at A&R's Morris facility.

Yard Conversion

A walk around the A&R yard offers an up-close and personal view of the many functions at play in the dry bulk business. Foremost, uniform hopper cars fill the line of sight. Canadian National is the primary rail carrier for A&R's Morris facility, but CSX serves it as well. The 3PL does yard switching internally with its own locomotive. The bright blue GMTX engine sits idly by.

Railcars represent forward storage locations for A&R. So rail-direct delivery–taking pellets off line and delivering to customers via truck – represents about 90 percent of its business. On any day, the 3PL performs up to 125 rail-to-bulk truck transfers.

Beyond the tracks lie neatly organized colonies of drytainers and ocean intermodal boxes, owned by A&R and used predominantly for storage. To the left, a pair of Laurel and Hardy-like silos, one short and thick, the other towering and skinny, connect to a shed where trucks load grain.

Nearby, a shrinking slag pile with remnants of a much larger footprint, and human ones, too, draws curiosity. The U.S. Navy uses it as sandblasting material for cleaning ships. A&R turns the pile about twice a year.

Morris, Illinois

Plastics, Pellets, and Pallets

All around, A&R's pneumatic bulk tank trailers and flat bed chassis used to transport drytainers are poised and posed in various stages of progress. A few are tilted to load; some are detached and idle; still others are being readied for cleaning.

Vessels moving or storing plastic pellets need to be clean, dry, and odor-free to prevent contamination. A&R staff is vigilant about properly cleaning and inspecting equipment to the point of testing virtually every unit and providing inspection certificates and samples to customers.

Bumper stickers on A&R's trailers convey as much: "Right Railcar?" "Purge After Loading;" "Check, Check, and Recheck."

Excessive heat is another area of concern for temperature-sensitive cargo such as plastic pellets. Conveyance creates higher temperatures, which is problematic for a product that has varying melt points. So James Bedeker engineered a solution. On the trailers, air-conditioning units help control temperature variation and expedite the loading and unloading process.

Taking on the Eliminator

But all is not what it seems in the yard. The red intermodal containers stacked inconspicuously in the background hold A&R's secret weapon–the "Eliminator."

Simple but effective is the best way to describe the 40-foot ocean containers imbedded with 1,500 cubic feet of aluminum lining–essentially a tank within a box. The invention, also created by Bedeker, does just what its name implies. It eliminates the need for disposable liners, as well as the dwell time of rail cars on track.

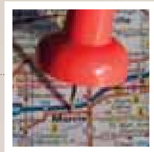
"We're merely changing the address of the inventory," says Rich Kennedy, yard operations manager, as a Kalmar lift truck places an Eliminator down for inspection. "One rail car has one address–five Eliminators have five addresses."

With its hatch removed, and a discharge hose hooked up to a hopper car, the vessel has the look of an aluminum heart pumping plastic through the system. Using pneumatic suction, A&R can remove 800 to 1,200 pounds of pellets each minute out of rail cars–which equates to 2.5 hours per unit.

Laurel and Hardy, silo style

Where Eliminators and hoppers converge

Sucking pellets…



Morris, Illinois

Plastics, Pellets, and Pallets

The A&R gang

This efficiency and convenience helps the 3PL meet the plastics industry's stringent demand for just-in-time (JIT) movements, explains Jeff O'Connor, president, A&R Logistics.

"Plants demand compliance because they are very process-driven. There are variables in terms of reliability and delivery to customers. Delivery time, plus or minus 15 minutes, must be exact. Standards are tight," he adds.

For longtime customers such as LyondellBasell, the Eliminator fits right into their supply chain strategy. A&R manages approximately 75 percent of the Houston-based petrochemical manufacturer's moves in North America and provides some packaging and warehousing services. It generally ships full rail cars from plants, but many times customers can't take rail cars or rail car quantities. So the Eliminator system helps LyondellBasell better manage inventory, build loads, and turn equipment.

"We have a hopper car network of around 9,500 units–which is quite large," observes Nathan Buza, manager of commercial logistics, LyondellBasell. "The faster we turn these cars, the fewer we need, and the less cost we have tied to these assets."

One hopper car feeds about four bulk truckloads. So instead of waiting for a corollary number of trucks to come in and unload a train unit, the Eliminator allows shippers to re-task assets without lengthy dwell periods. "With the Eliminator, we can turn cars in three or four days versus sometimes as many as 30 days," adds Buza.

The system also allows A&R and its customers to blend materials for the end user and fully utilize inventory. "For example, after unloading a rail car into bulk trucks, there might still be 1,000 or 2,000 pounds left over," explains Buza. "How do you manage that heel? Do you send it back to the manufacturer? This can create problems. With the Eliminator, excess inventory is stored, then used to top off other trucks as they come in."

Big Box Storage

Unlike the red ocean containers stacked in A&R's yard, there's no mystery about what's in the boxes crowding the warehouse. Corrugated Gaylord containers filled with different types of plastics are stacked three and four high–pallets sandwiched between–and feature customer names such as Forest Hill, Equistar, and Flint Hills.

The warehouse floor is spotlessly clean. A box not quite overflowing with floor-swept pellets serves as another reminder. So do the slick spots on the floor. It's slippery sterile.

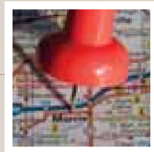
Beyond efforts to prevent contamination, "responsible care" is a big part of the plastics supply chain, says Norm Buck, director of customer service and logistics administration, A&R Logistics. "We have trays underneath rail cars to catch over-flow spillage. We also have a responsibility to report any spills. A sweeper frequently circulates the warehouse, and a filter in the drainage catches any plastic pellets before they enter the water system."

To one side of the facility, paired silos positioned next to a rail siding are vacuum-sucking pellets from a rail car into boxes for packaging. Gaylord containers with bags inside rotate one-by-one along a conveyor belt as they are filled from above. A&R can transfer one train car compartment–a hopper has four–from bulk to box in 1.5 hours.

The soundscape is loud, filled with the hum and whir of the vacuum discharge operation. You can hear the pellets pinging though the industrial hose, and feel the vibration to the touch. Moving away from the packaging operation, layers and rows of cardboard dampen the noise.

The stacks of Gaylord boxes are purposed much like the drytainers and Eliminators outside in the yard. Product is placed in containers and customers have visibility to that inventory. As demand dictates, boxes are moved out by truck. If necessary, shippers


How to be FEARLESS
...about the
FUTURE



Morris, Illinois

Plastics, Pellets, and Pallets

Gaylord boxes filled with plastics

can go from bulk to box storage back to bulk for redistribution–but adding touches is not the norm.

Manufacturers often use a blend of plastics in production–materials with different colors, textures, and heat points. Ordering volumes are equally flux. A customer might buy one type of pellet in bulk and order smaller shipments of another. A&R can deliver to customer preference–by rail car, tank truck, TL, LTL, in bags, boxes, and sacks.

The Morris facility is primarily used for regional distribution, serving customers within a 300- to 350-mile radius. But there are exceptions. Near one loading dock where LTL shipments are staged, a skid of shrink-wrapped boxes sits waiting for special delivery to Cologne, Germany. In another corner, imported bags of PET wait to be moved or dumped and consolidated in a hopper car.

A&R uses another part of the warehouse for storage. "Pure warehousing is a value-added service for us," says Buck. "Moving from one medium to another opened an opportunity and we took it."

The Sum of its Parts

A&R has grown into a full-service third-party logistics provider with a similar logic and linear progression. James Bedeker built the business by meeting a specific industry need–transporting plastics–then added resources into the mix as customer demand expanded.

Today, the Morris terminal is the convergence of A&R's business units–logistics, transportation, packaging, and warehousing. The conveyance is the key, as the multitude of railcars and trucks outside the facility demonstrate. These multimodal capabilities allow A&R to explore cargo opportunities beyond simply plastics.

But the less-apparent details stand out. A&R's innovative Eliminator system and trailer cooling units, and strict attention to cleanliness and safety, are the value-adds that make its transport parts gel. For shippers, finding a solution that meets a specific need is important. But finding a 3PL that can mold assets and services into a unique blend is paramount. ■

Learning about the plastics industry and seeing A&R Logistics' business firsthand, I discovered an uncanny similarity between the two.

I suppose you are what you carry.

Plastics can be fixed and malleable, pure or blended. The 3PL's value proposition shares a similar mix of qualities.

Its fixed assets – trucks, trailers, containers, track, warehouses, and terminals – each serve a specific and commoditized need. With its intermodal accessibility, warehousing footprint, and innovative inventory management tactics, A&R can also help customers blend these resources to unique specifications.

There's no steadfast way to describe everything A&R can do – except perhaps to say it's plastic.

Anything But Uncommon

After one year of intermittent rambling and four months of episodic writing, I'm at a loss for words. So I turn to someone else's.

Two years ago, I received John McPhee's latest book, *Uncommon Carriers*. The jack-of-all-trades author has always been a welcome addition to my bookshelf. His subject matter and descriptive writing style–ethnographic to the core–mirror my own sensibilities.

Uncommon Carriers struck a new chord though, because it's about transportation and logistics. McPhee tells his story by chugging along with a Union Pacific coal train, piloting scale-model containerships at a Swiss resort, exposing UPS' outsourcing secret, and hitching a ride with an owner-operator on a cross-country odyssey.

Reflecting on this last trip, McPhee writes: "If you have crossed the American continent in the world's most beautiful truck, you prefer not to leave it forever. You think of it from time to time–stainless, flashing like a signal mirror in the Carolinas, California, in Wisconsin, Wyoming, Oregon, and Georgia–and you want to climb back in the cab."

So he did. And I did, too.

I didn't have a truck cab; I had a taxicab. And my real vehicle was *Inbound Logistics*. From time to time, I, too, marvel at where it has taken me. In my mental mirror, British Columbia, Virginia, Switzerland, Alaska, and Ireland, flash in and out of frame.

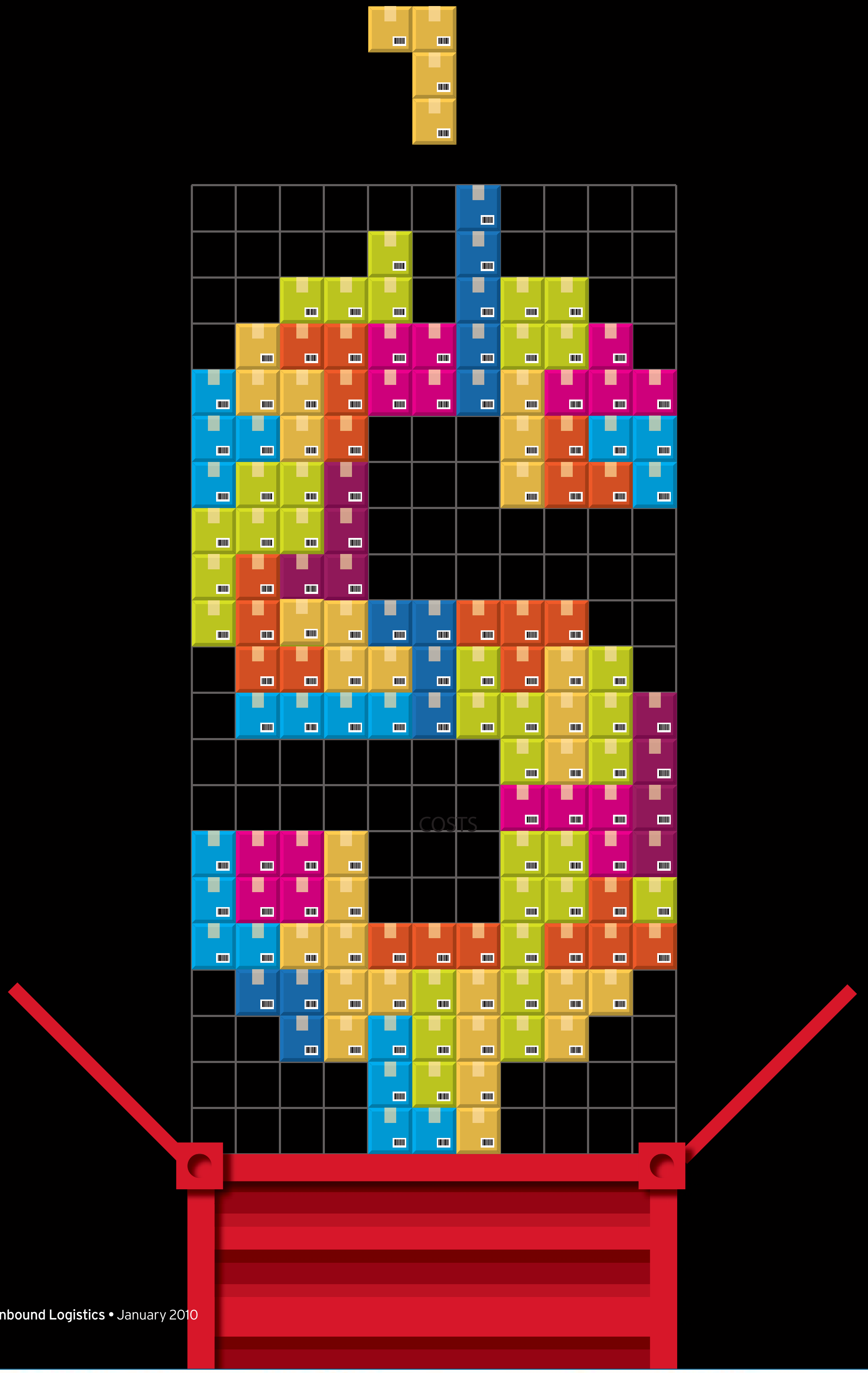
I suspect McPhee has carried this same impulse throughout his career, climbing back up in his "cab" to engage, interpret, and describe new people, places, and perspectives. This was my first time–and I'm just stepping down–but I have a new point of view. Trade articles are always embedded with a context that rarely sees the ink of press: first, the author's motivation; second, the interaction with sources–both people and places. It's rare when these threads are uniquely visible in the final fabric.

These stories are soaked in description to make an impression. They are also anchored by real-world issues – infrastructure, innovation, expansion, contraction – that industry tackles every day. The color commentary brings out the play-by-play details.

Like McPhee's imagined map, Belen, Elizabeth, the Piedmont Triad, Nashua, and Morris have joined mine. No doubt others will follow.

In retrospect though, I can't help but think that McPhee got one thing wrong. These stories are anything but uncommon.

They're everywhere. ■


COSTS

Shippers use overseas consolidation, strategic loading tactics, and container sharing to cast off ocean transportation's financial burden.

CONTAINING OCEAN COSTS

BY MERRILL DOUGLAS

In the old days, merchant sailors caught in a storm on the high seas were often forced to toss cargo overboard to keep their ship from sinking. In today's rough economic waters, companies also are trying to lighten their loads. But instead of dumping cargo, they're cutting costs.

For companies importing goods via ocean carrier, fitting more cartons into a container here, saving a little on labor there, and directing high-demand product to specific U.S. markets can make a big difference to the bottom line.

How are importers removing excess costs from ocean shipments? Here are some recent trends.

OVERSEAS CONSOLIDATION: COMBINE AND CONQUER

Consolidation is a tried-and-true way to save transportation dollars. In their domestic operations, many U.S. companies already combine smaller shipments into full truckloads when they can. Importers may seek similar benefits by consolidating at the point of origin.

Overseas consolidation centers receive finished goods from multiple suppliers–and sometimes from multiple countries–and assemble them into full containerloads. Each container then travels by ocean to the appropriate stateside distribution center (DC) or store.

Overseas consolidation cuts transportation costs by letting shippers use full containerload service rather than less-than-containerload, and by fitting more product into full containers. "Dividing the cost of one container by more cargo reduces the transportation cost per unit," says Marc Heeren, senior director for supply chain development at Damco, a Madison, N.J., logistics service provider.

Today, many companies find an overseas consolidation strategy attractive. "U.S. import growth, stockkeeping unit (SKU) proliferation, and DC bypass programs have led to increased interest in origin consolidation," says Jeff Bumgardner, vice president, North America, for MOL Consolidation Services (MCS) in Concord, Calif.

The economic downturn has also sparked greater interest in consolidation at origin. With U.S. consumers spending less, companies have scaled back on inventory, placing smaller orders with suppliers. "Smaller quantities call for consolidation to maximize loadability and meet shipment windows and delivery dates," Bumgardner says.

Consolidating overseas is part of the larger trend of saving money by performing fewer logistics functions in the United States. Overseas facilities, especially in Asia, can often accomplish the same work for less money.

Importers are among those developing interest in the notion that there are gains to be made overseas. "The international logistics portion of their supply chain is the final frontier for achieving cost savings and improving speed to market," Bumgardner says. Fortunately, shippers have an improved arsenal of tools to help manage vendors and track merchandise status overseas, making these operations more practical.

For some shippers, the overseas consolidation facility serves strictly as a replenishment center. A company might still use a domestic DC for scheduled deliveries. But if a U.S. store requires small quantities of numerous products to refill its shelves, the overseas facility consolidates those orders in one container.

Many importers and retailers operate replenishment centers in the United States. "They realize they can perform that function at origin with less expensive labor, and that being closer to vendors gives them better control," says Anthony Chiarello, executive vice president and chief operating officer at NYK Logistics in Secaucus, N.J.

Consolidating inventory overseas, rather than sending separate shipments from each supplier to a DC in the United States, also helps companies better match supply to customer demand.

Consolidating import shipments from multiple suppliers into full containerloads allows companies to cut transportation costs and better match supply to customer demand.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Moving Tomorrow Together.
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"The higher in the supply chain a company maintains its inventory, the more flexibility it has in sending it to different markets," Heeren says.

One of those markets might even be a local one because many U.S. retailers now operate stores in Asia, or plan to in the future. "They use consolidation centers not only for replenishment to U.S. locations, but also as a consolidation point for goods moving into a local Asian store network," says Chiarello.

As an additional benefit, overseas consolidation supports sustainability efforts. Companies that move goods in fewer, better-targeted shipments shrink their carbon footprint. "That benefit may drive the decision toward starting a consolidation operation," says Heeren.

MAKING IT WORK

Consolidation at origin is not a new strategy. Women's apparel maker Liz Claiborne was a pioneer of the concept, having launched its program with Maersk Lines' Mercantile division (now Damco) in the 1970s to consolidate product from factories in Hong Kong and Japan. Today, Liz Claiborne consolidates shipments at numerous facilities in the Pacific Rim, South Asia, and Central and South America.

Although the core process is the same, new technology and services offered by the consolidator have brought many improvements to Liz Claiborne's strategy. For example, the consolidator now makes decisions that the company used to make internally.

"There's no reason for an employee to look at every purchase order," says Frank Saffioti, director of logistics at Liz Claiborne in New York. Armed with key data, a good consolidator will help analyze the product flow, then make the right decisions on the client's behalf.

Plymouth, Minn.-based apparel retailer Christopher and Banks has practiced overseas consolidation for more than 10 years. The company hasn't yet used that strategy with its new freight forwarding partner, MCS, but plans to start consolidating small orders in MCS's Yantian, China, facility.

"Transporting a 40-foot container costs significantly less than two 20-foot

CONSOLIDATION PITFALLS

Shippers may assume that overseas consolidation is a simple process, but plenty can go wrong as shippers and service providers try to synchronize the activities of vendors and carriers. "Vendors may deliver partial shipments," says Marc Heeren, senior director for supply chain development at logistics services provider Damco. "They may get stuck in traffic and miss the shipment window. Or containers are not available, the vessels are full, or certification is not in place to export." The strategy requires efficient coordination and management.

Another possible drawback to consolidation is that keeping inventory in an overseas consolidation hub, rather than in a domestic DC, can make it harder to respond to fluctuating demand for product in the United States. "If the origin hub is in Asia and the demand is in the United States, that creates a longer leg over which to ship product," says Rajiv Saxena, vice president, global supply chain engineering solutions at APL Logistics in Oakland, Calif. A company that uses this strategy is challenged to maintain the right levels of inventory in the right place.

One challenge apparel company Liz Claiborne faces is timing multi-country consolidation. "We have to plan for shipments from different origins to meet at a consolidation point, then consolidate them to our final destination," says Patricia Garofalo, the company's senior manager of logistics for direct ship.

For companies that manufacture in more than one country and want to bring those products together in a consolidation center, it's important to study the customs issues carefully. Must the consolidation facility be located in a free trade zone? If so, what are the ramifications? How do requirements differ for various types of goods?

Local customs regulations can create further complications. Until a few years ago, for example, China applied customs requirements to goods moving from one territory to another within the country. Trying to streamline the documentation process could be a significant challenge.

One key to performing consolidation well is to implement a strong standard operating procedure (SOP) with trading partners. "Clearly defining the rules of engagement, with a clear SOP, can lead to a successful operation," says Frank Saffioti, Liz Claiborne's director of logistics.

The biggest challenge that department store chain Belk Inc. must manage when working with an overseas consolidator is making sure that the service provider scans the bar-code labels that vendors have applied to each carton. "We have to make sure that all the origins with container freight stations can scan and pack a container correctly so we receive the electronic data interchange transaction," says Diane Hartjes, director of private brands and customs compliance at Belk.

For apparel retailer Christopher and Banks, getting vendors to provide reliable information about inbound product is an area of particular concern. "The biggest challenge is getting accurate shipment volume," says Chris Carlson, director of global logistics and customs compliance for Christopher and Banks. "The vendor might tell us the shipment will be 30 cubic meters [CBMs], then it arrives at 40 CBMs."

When you fill containers with product from more than one vendor, it's crucial to get those details right, so Christopher and Banks considers the vendors involved when deciding when and where to consolidate shipments. The company's vendor compliance manual is an important tool for helping vendors understand what type of information they need to provide.

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Palletizing goods speeds loading and unloading, resulting in lower labor costs, but this strategy does not optimize the container space. More cartons can be packed into a container if the boxes are loaded directly on the floor.

containers," says Chris Carlson, director of global logistics and customs compliance, Christopher and Banks.

FACTORY LOADS VS. CONSOLIDATION

Charlotte, N.C.-based department store chain Belk Inc. also switched to MCS as its overseas consolidator in late November 2009. Although the company has been consolidating at origin for about 10 years, it's using that strategy less these days, says Diane Hartjes, director of private brands and customs compliance at Belk.

"The company is growing, and because we're importing more, we've chosen factory loads over consolidation," Hartjes says. "However, if we can't fill a 40-foot or 20-foot container, we'll use a consolidator to ship goods combined from several of our smaller vendors."

STRATEGIC LOADING TACTICS: OPTIMIZING THE CUBE

As overseas consolidation spurs companies to ship more full containerloads, there's more reason than ever to reconsider strategies for filling those containers. Does it make sense to pile as many cartons as possible from floor to ceiling–known as floor-loading or dead-stacking–to get more bang for the per-container transportation buck? Or should a company use pallets or slipsheets, which take up space in the container but let workers load and unload quickly with the help of forklifts or other equipment?

"Palletizing goods doesn't deliver optimal cube utilization," says Mokhtar Bazaraa, senior vice president, supply chain solutions at Agility Logistics in Irvine, Calif. "It results in more containers and more ocean transportation." But increased loading and unloading productivity translates into lower labor costs.

"The tradeoffs depend on the specific application and situation," Bazaraa says. "In markets where labor costs are low, transportation cost savings outweigh added labor costs."

GIVING SAVINGS A LIFT

Calculating the best approach for a particular load isn't difficult. "Determine how loading and unloading affect handling costs and how improved utilization impacts transport costs. Then figure the supply chain inventory cost changes to calculate the best option," suggests Heeren.

Greater productivity may not always yield significant savings, says Bill Rehring, president of TOPS Engineering, a Richardson, Texas, developer of cargo load planning and optimization software. In much of the Pacific Rim, labor costs to floor-load a container are very low. "When you get to Long Beach, however, it can be expensive," he notes.

But the savings gained by fully loading a container outweigh the benefits of using pallets or slip sheets to ease materials handling. "Most container shipments are dead-stacked, and crews palletize the goods as they unload them," Rehring says. "That's because the cube cost per container has increased from $2,000 to as much as $5,000."

The transportation/labor cost equation could change now that labor costs in China are rising, says Heeren, whose company uses TOPS's *MaxLoad* software to optimize its loading plans. "Companies need to continuously review the most efficient strategy," he says. "The changing market affects transportation, labor, and capital costs."

Besides judicious pallet use to boost dock productivity, a new loading

strategy on the horizon promises even greater labors savings, says Bazaraa. At least one Agility customer wants to organize products for delivery to U.S. retail stores before putting them on containers overseas.

"Suppliers can palletize up front, and not just by SKU or goods type," Bazaraa says. "They can palletize by store," mixing different products bound for the same store on a single pallet.

When containers reach the United States, there's no need to deconsolidate loads and re-sort goods for shipment to stores. "It becomes a simple matter of cross docking," he adds.

This strategy potentially reduces more than loading and unloading costs. "It also reduces the cost of sorting and building up," Bazaraa says. Instead of performing those functions in the United States, the company gets the work done at the point of origin, where labor costs less.

"Few companies are doing this now," Bazaraa admits, but Agility has been discussing the strategy with customers, and one has plans to implement it in 2010.

While weighing container loading options, shippers should also consider how they package products for transportation. "Packing products well, or over-packaging them, helps protect against damage in transit. But producing the packaging also imposes a cost," says Rajiv Saxena, vice president, global supply chain engineering solutions at APL Logistics in Oakland, Calif. "And the more packaging, the less space you can use inside the container."

CONTAINER SHARING: JOINING FORCES

Just as one shipper may save money by consolidating shipments from different suppliers, two shippers may gain benefits by consolidating cargo in one container.

Several APL customers took this approach when separate divisions of one company decided to combine their previously independent supply chains and merge procurement activities. "They wanted to consolidate shipments and share containers," says Saxena.

Some companies also have expressed interest in sharing containers with trading partners. That's especially appealing when a retailer and a clothing manufacturer, for example, source product in the same part of the world. Instead of taking delivery of the clothing in the United States, the retailer could arrange to have it shipped in a container with other goods that it's importing.

Apparel retailer Christopher and Banks started consolidating shipments overseas more than 10 years ago to cut transportation costs.

The companies could save on transportation by building a full containerload. They might save further by shipping the brand owner's product directly to the retailer's DC, removing a link from the supply chain.

JCPenney, a major Liz Claiborne customer, could make a good partner for this kind of arrangement. "But volumes are currently so large, we load containers specifically for JCPenney and deliver them directly to its U.S. import centers," says Saffioti.

Companies that co-load with a partner face challenges such as allocating transportation costs, which can be difficult when two divisions of a company operate on different computer systems. "The costs are reduced dramatically," Saxena says, "but sometimes one division grumbles about subsidizing the other division."

For separate companies to collaborate in this way, the challenges may be even more daunting.

"They need the right working relationship, because agreements have to be made up front," Keller says. "For example, if one shipper delays the other, who's responsible for the charges?"

"A suitable partner would be a company we trust, with a reliable supply chain," Carlson says.

APL hasn't yet fully implemented a co-loading arrangement for international shipments, but interest is growing. "Shippers are looking for every opportunity to cut costs," Saxena says.

As shippers continue to seek out cost-saving opportunities, those that correctly work out the details–whether for co-loading, container optimization, or origin consolidation–can look forward to smoother sailing, even in stormy economic times. ■


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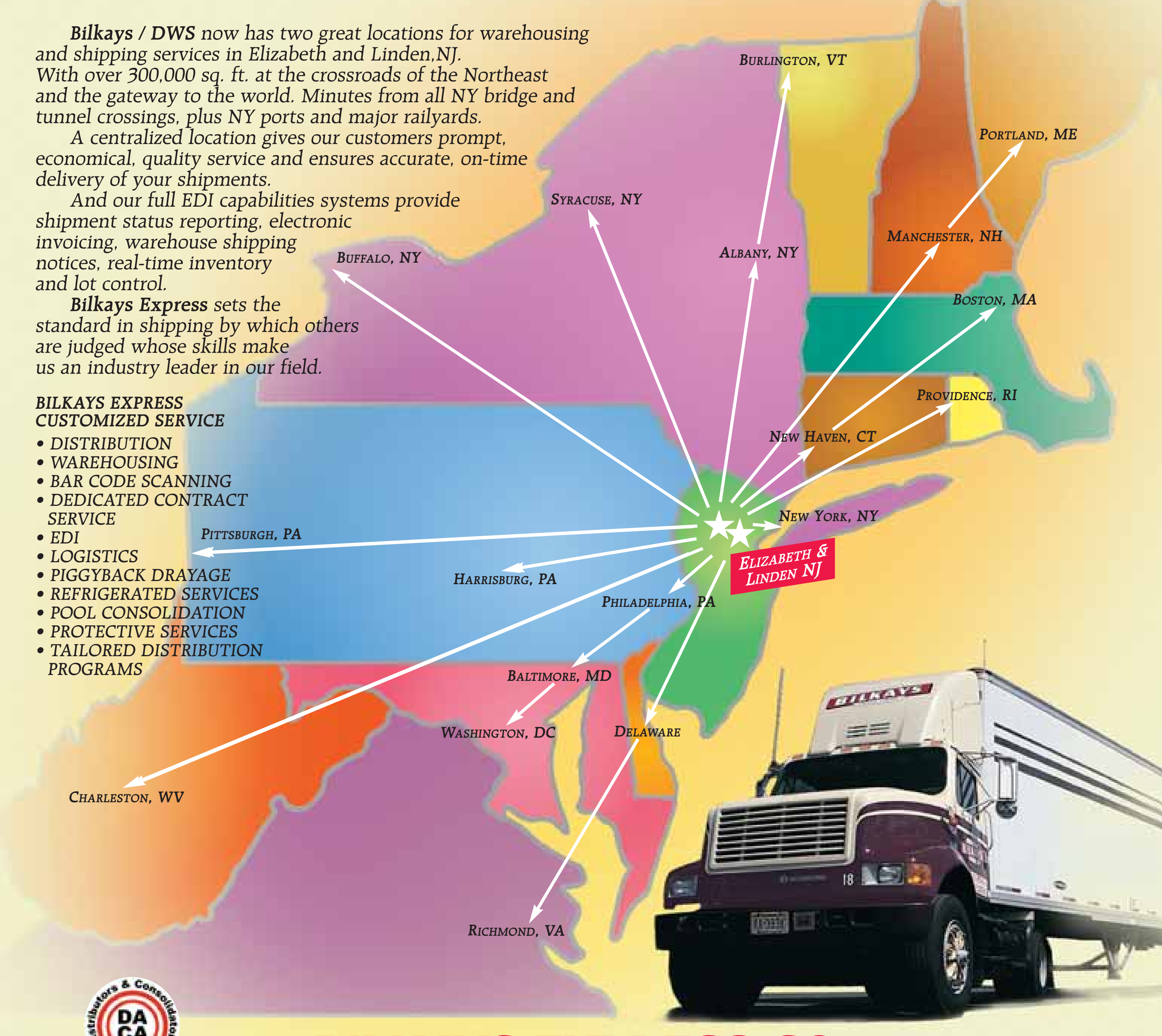

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UNDER PRESSURE

Healthcare leaders diagnose their biggest supply chain pains and write a prescription for the Obama administration.

The healthcare industry is feeling besieged on all sides, with companies slammed by the economy and worried about cost control as they attempt to drive innovation and ensure safety and security.

That's just for starters. Healthcare decision-makers also are grappling with increasing regulations and recognize they've had limited success so far in actually managing supply chain costs.

Those are the findings of UPS' second annual *Pain in the Healthcare (Supply) Chain* survey of supply chain decision-makers at small to mid-sized companies (SMBs) in the pharmaceutical, biotech, and medical device industries, as well as supply chain decision-makers at large healthcare companies with more than $1 billion in revenue.

According to the survey, top decision-makers at all-sized companies rank "managing costs" as their biggest supply chain concern (*see Figure 1*).

Specifically, 55 percent of small company respondents are "highly concerned" with managing costs and fewer than half of those (46 percent) report success in addressing this area. Among the leaders at large companies, 81 percent are "highly concerned" about managing supply chain costs and only 41 percent report success in doing so.

Product damage, loss and spoilage, and meeting customers' changing demands for service rank second among supply chain concerns, with 42 percent of SMBs reporting they are "highly concerned" with these issues.

Despite the economic slowdown, many companies still plan to increase supply chain spend, although to a lesser degree than before. Forty-five percent of small company respondents will increase supply chain spending by an average of 18 percent over the next 18 months. Forty-three percent of SMBs will hold steady on spending during the next 18 months, and only nine percent will cut spending.

For those planning to increase spending, 51 percent cite a greater demand for their products and services as the reason. Among large companies surveyed, 44 percent expect supply chain spending to increase, while approximately one-third expect to reduce spending over the next 18 months.

INCREASING REGULATION: A TOP CONCERN

When it comes to business concerns among companies of all sizes, regulatory issues grab the spotlight. Numerous industry factors are driving this growing focus on regulations, including heightened concerns over security and patient safety, increased cross-border controls, and an increase in temperature-sensitive products entering the marketplace.

More than half (56 percent) of companies with $1-billion-plus revenues rank "increasing regulations" as their top business concern (*see Figure 2*). At the same time, nearly one-third (30 percent) of SMB respondents rank increasing regulations as their top business concern.

Fifty-two percent of large companies report that keeping up with regulatory compliance laws is a challenge in serving global and emerging markets. The majority of large companies (74 percent) cite temperature-sensitive concerns as the top regulatory challenge from a supply chain standpoint.

For SMBs, the top three regulatory

FIGURE 1: SUPPLY CHAIN CONCERNS

What are you most concerned with from a supply chain perspective?

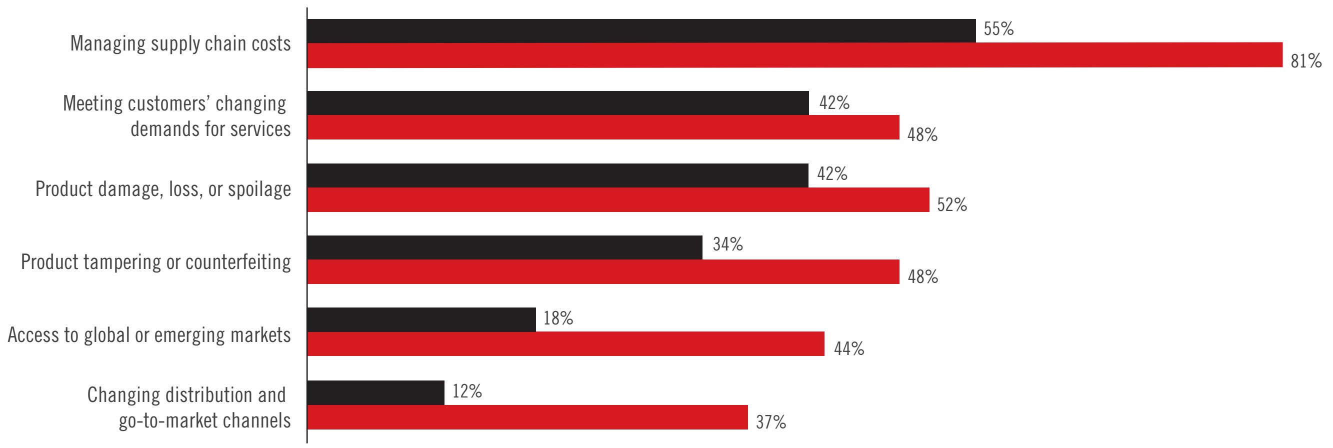
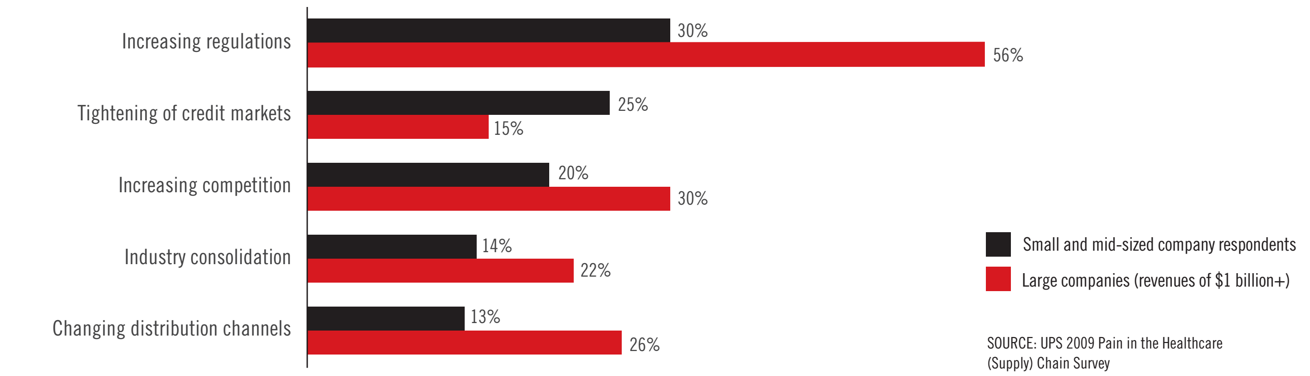


FIGURE 2: BUSINESS CONCERNS

What are you most concerned with from a business perspective?



SOURCE: UPS 2009 Pain in the Healthcare (Supply) Chain Survey

It's a patient, not a package

ConvaTec's prescription for a healthy supply chain calls for a dose of outsourced logistics.

As one of the world's largest providers of ostomy products that patients rely on for the rest of their lives, $1.6-billion ConvaTec can attest that customer service is critical. "We don't sell boxes to a distributor," says Michael Steadman, president, ConvaTec USA. "We handle products that have an impact on patients' lives."

Skillman, N.J.-based ConvaTec serves consumers and healthcare professionals on six continents through four business divisions. In addition to the patients who use ConvaTec products, the company's direct customers include more than 129 distribution partners that move products to market. These companies look to ConvaTec not only for its high-quality products, but also to help them with their own inventory management and cost containment planning. This requires a flexible supply chain.

The desire to increase supply chain flexibility and achieve a higher level of customer service spurred ConvaTec to re-examine its supply chain strategy.

SPEED THE CHAIN

One major supply chain challenge for ConvaTec was improving order turnaround times, which were averaging two to four days, while also reducing inventory days on hand. Because ConvaTec manufacturing sites are located in the Dominican Republic and the United Kingdom, with one U.S. location in Greensboro, N.C., many products travel long distances to reach end customers. In addition, ostomy products are considered medical devices with a Class 1 qualification in the United States; they are regulated by the Food and Drug Administration and must adhere to strict guidelines.

Faster order turnaround times were essential for enabling the company to continue providing top-quality customer care. At the same time, issues on the back end of the supply chain were costing ConvaTec valuable time and money. One area needing improvement was the collections process. ConvaTec's Days Sales Outstanding were slightly above the industry norm, an average that certainly left room for improvement.

After examining its current distribution processes and needs, ConvaTec determined a diagnosis: it needed to outsource its supply chain to a third-party logistics provider.

ConvaTec turned over all its supply chain functions – order entry and processing, warehousing, distribution, global transportation, call center service, accounts receivable, and chargebacks – to UPS so it could focus on product development, marketing, production, and sales.

To meet ConvaTec's goal of speeding products to market, UPS first assembled global air and ocean freight services to and from the company's manufacturing facilities to the UPS campus in Louisville, Ky. The solution also included fulfillment, outbound small package, and UPS Freight distribution to ConvaTec's wholesalers and retailer distribution centers. Customs brokerage services and supply chain visibility solutions ensured that products moved on time.

ConvaTec also tapped into UPS's Order to Cash services, which enable healthcare companies to outsource front- and back-end supply chain functions such as order processing, customer service, invoicing, accounts receivables collection, and chargebacks. UPS acts as the company's customer service center, taking telephone orders directly from ConvaTec's distributor customers, then ensuring those orders are fulfilled. The 3PL also processes customer invoices and coordinates all retailer discount chargebacks for ConvaTec.

As part of the outsourcing relationship, UPS employees received rigorous training and education about ConvaTec's ostomy products at the UPS Healthcare Logistics Center in Louisville. During the initial training, UPS employees were so inspired by ConvaTec's patient care that they created a motto for UPS healthcare operations: "It's a Patient, Not a Package."

With the new distribution solution, ConvaTec was able to cut order turnaround time from the initial two to four days to one to one-and-a-half days. Today, the company can react immediately to order requests received before 2 p.m. EST, with UPS processing orders and shipping products that day. Orders received after 2 p.m. can still be guaranteed for next-day delivery.

The solution also allows ConvaTec to take emergency orders up to 10 p.m. for delivery anywhere in the United States the next day. ConvaTec is currently receiving about six to 10 of these emergency orders per week – requests it can now easily fulfill, according to Bill Binder, associate director of customer service and operations for ConvaTec.

ConvaTec is now able to offer a higher degree of service to its distributor customers. Now that these customers know exactly how long it will take products to be delivered from Louisville, they can plan ahead to keep their own inventory costs down, a major advantage for distributors.

BACK-END BENEFITS

As for the back end of the supply chain, since functions such as customer service, order entry, and accounts receivable were outsourced, ConvaTec's Days Sales Outstanding has decreased by 30 percent – a significant improvement.

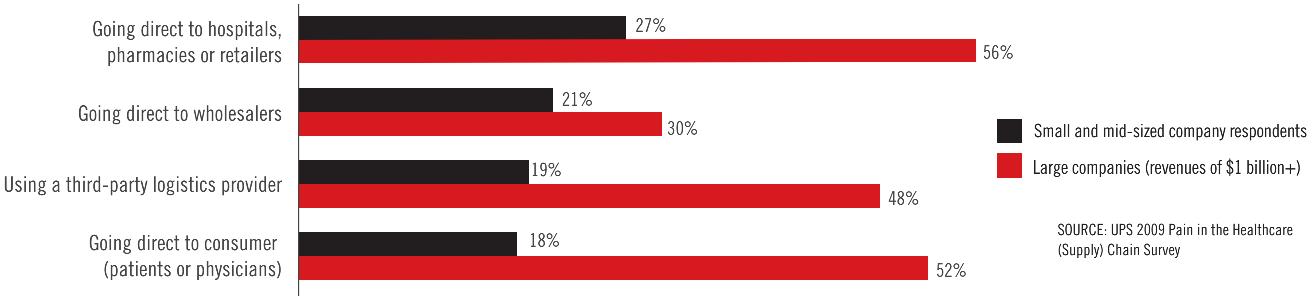
Another major benefit that ConvaTec has gained since outsourcing its supply chain is the ability to take advantage of UPS's Louisville Healthcare Logistics Center, an FDA-regulated, state-of-the-art dedicated healthcare facility.

But the biggest advantage of outsourcing logistics is the amount of flexibility ConvaTec has gained. "We have a very flexible supply chain now," reports Steadman. This new level of flexibility has allowed ConvaTec to reduce inventory days on hand, speed new product launches, increase customer responsiveness, and accelerate cash flow.

Now, that's a healthy supply chain.

FIGURE 3: **2009 CHANGES TO DISTRIBUTION CHANNEL STRATEGY**

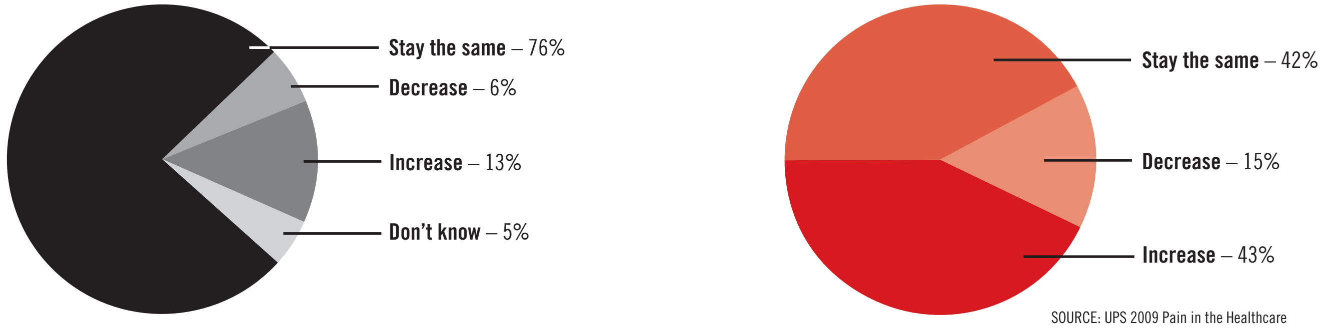
How will you change your distribution/go-to-market strategy in the next 1-2 years?



SOURCE: UPS 2009 Pain in the Healthcare (Supply) Chain Survey

FIGURE 4: **EXPECTED CHANGE IN OUTSOURCING**

In the next 2-3 years, will the amount you outsource increase, decrease or stay the same?



SOURCE: UPS 2009 Pain in the Healthcare (Supply) Chain Survey

challenges from a supply chain perspective are: changing regulations in the United States and abroad; cost of compliance; and training employees on regulatory requirements.

HEALTHCARE PRIORITIES

The survey also reveals decision-makers' views on the top healthcare priorities for the Obama administration.

Small to mid-sized healthcare companies believe that ensuring product safety and security (ranked first by 33 percent) and simplifying regulatory requirements (ranked first by 31 percent) should be the top two spending priorities for the administration.

Fifty-two percent of large healthcare companies rank simplifying regulatory requirements as the top spending priority for the new administration, followed by ensuring product safety and security (33 percent).

Looking toward the future, shifts in supply chain strategies to meet evolving customer needs are apparent. Large healthcare companies plan significant changes in their go-to-market strategies in 2009, while smaller companies plan far fewer changes (*see Figure 3*).

Among companies with revenues of $1 billion-plus, 56 percent plan to alter their distribution models to go direct to hospitals, pharmacies or retailers; 52 percent plan to go direct to consumers (patients or physicians); 30 percent will go direct to wholesalers; and 48 percent plan to work with a third-party logistics provider in the near future.

Approximately one in four (27 percent) SMB respondents plan to change their distribution models to go direct to hospitals, pharmacies, or retailers in the near future, while 21 percent plan to go direct to wholesalers in the near future.

The healthcare industry is increasingly embracing outsourcing, especially large companies that are outsourcing as a way to drive efficiencies across the supply chain while focusing on their core business.

The largest difference between the small and large healthcare companies surveyed are in their outsourcing plans (*see Figure 4*). Forty-three percent of large companies expect to increase the amount they outsource in the next two to three years. Of the two-thirds of small and mid-sized companies that do not currently outsource any supply chain functions, no more than three percent expect to outsource in the next one to two years. ■

SURVEY METHODOLOGY: The survey was a two-part study. The first phase included a blind, in-depth phone survey conducted by Harris Interactive on behalf of UPS of more than 300 primarily small-to-mid-market companies in the pharmaceutical, medical device, and biotech industries. The second phase included a targeted online survey comprised of large healthcare companies from the same sectors with annual revenues of $1 billion and higher. Surveys were conducted in March and April, 2009. Qualified respondents were supply chain decision makers currently employed by companies with a primary business focus in healthcare (pharmaceutical, biotech, medical, and surgical devices).

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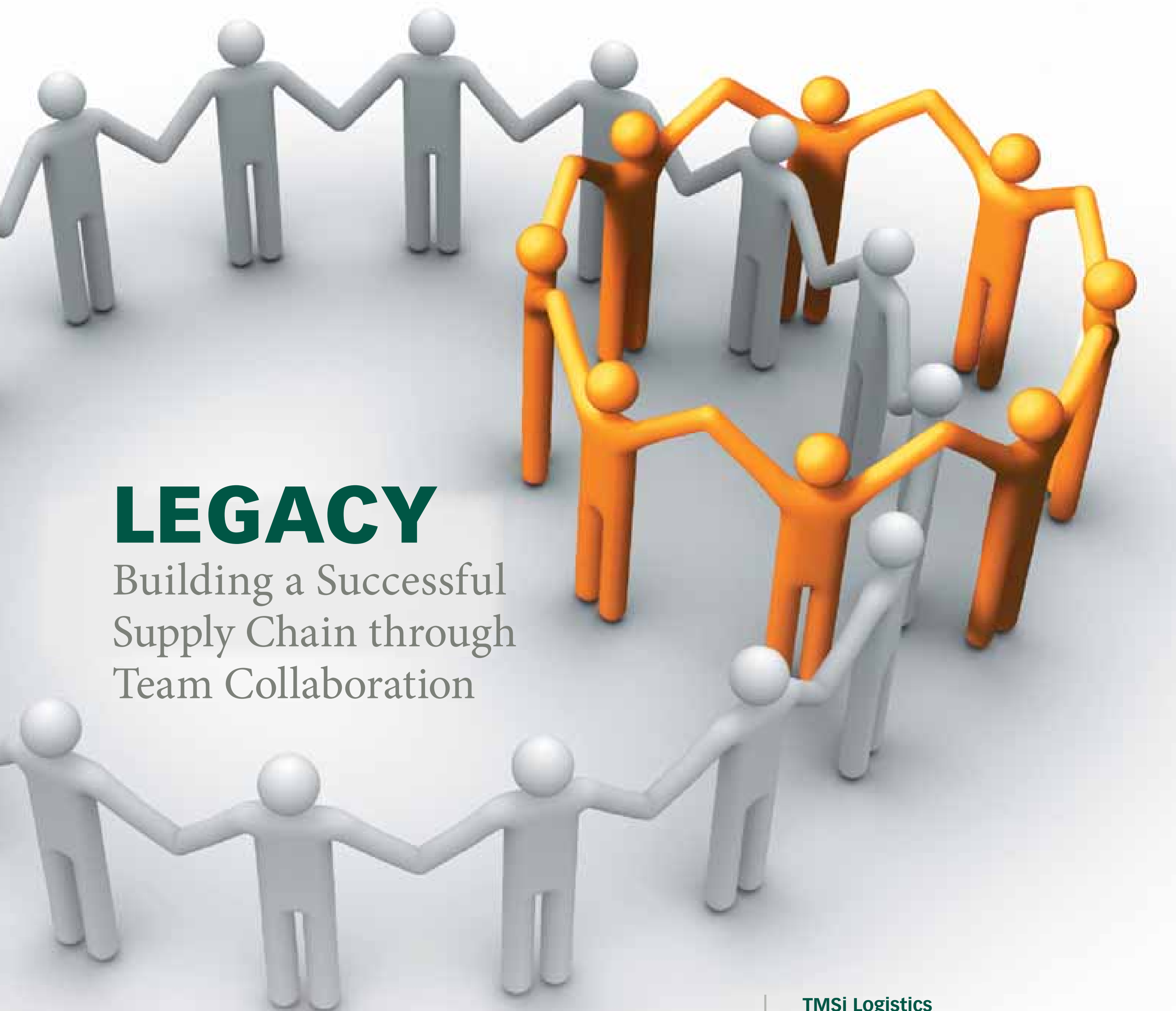

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MANY HAPPY RETURNS

Companies that combine the "reduce, reuse, recycle" mantra with the supply chain wisdom of managing costs and stamping out inefficiencies are developing reverse supply chains that help the Earth, the customer, and the bottom line.

by Amy Roach Partridge

The path to a greener supply chain is often paved with forward-looking ideas focused on environmentally friendly manufacturing, transportation, and distribution processes.

For some companies, however, the key to jump-starting supply chain sustainability can be found in reverse. By embracing reverse logistics strategies including returns management; product repair and refurbishment; recycling of goods and materials; and proper disposal of materials from unwanted goods, companies can move the sustainability needle while also cutting costs and reaping products with a longer shelf life.

And, by working to cut out inefficient returns processes that result in unnecessary transportation moves, reverse logistics proponents can reduce carbon emissions and improve air quality.

"Reverse logistics is inherently green," explains Gailen Vick, president of the Reverse Logistics Association, a trade organization focused on educating retailers, manufacturers, and third-party logistics providers about the benefits of reverse logistics. "Repairing, refurbishing, or recycling a product instead of throwing it in a landfill automatically does good for Mother Earth."

Considering the volume of consumer goods that ends up in landfills, it is clear that Mother Earth needs the help. In 2007, for example, only 414,000 tons, or 18 percent, of the 2.25 million tons of consumer "e-waste" (waste generated by electronic devices including cell phones, televisions, computers, and accessories) were collected for recycling, reports the U.S. Environmental Protection Agency. The remaining 82 percent, or 1.84 million tons, were mainly disposed of in landfills.

In addition, because repairing and refurbishing products helps extend the life of their goods, companies embracing the reverse logistics cycle can wait longer to produce new products–as well as the carbon emissions that come from manufacturing those goods.

"Manufacturing a new product always generates more carbon footprint than reusing an existing asset," Vick notes.

REVERSE IN THE SPOTLIGHT

Reverse logistics is currently in the spotlight thanks to the convergence of a down economy–which has supply chain executives turning over every stone in search of cost savings–and rising public interest in corporate environmental responsibility.

Indeed, 84 percent of shoppers responding to a 2008 CapGemini survey list sustainable manufacturing features as an important aspect when making buying decisions. As a result, companies that can tout their green supply chain practices are rewarded with both fiscal efficiency and a public relations boost.

"A properly executed reverse supply chain can yield both a monetary and public image benefit–two of the biggest impacts a company can achieve," says Brian Morris, director of engineering for ATC Logistics & Electronics (ATCLE), a 3PL in Fort Worth, Texas, that specializes in the electronics supply chain.

"Reverse logistics has been around for a long time, but it used to be an afterthought–'what do we do with this material?' Now it is a forethought because reverse logistics closes the supply chain circle," Morris notes.

"Reverse logistics activities give companies a full green supply chain; they not only go to market with a green product, but they also have a way to get it out of the field that does not include a landfill," he says. "And, if a company can market a refurbished product that is just as good as a new one, it can cut manufacturing costs while promoting a green image through selling refurbished goods."

But while many companies have embraced sustainable reverse logistics practices out of a desire to be green, the bottom line is still the biggest

Repair and refurbishment services provided by ATC Logistics & Electronics allow companies to salvage materials that would have gone to the landfill and to recover manufacturing costs by marketing refurbished products.

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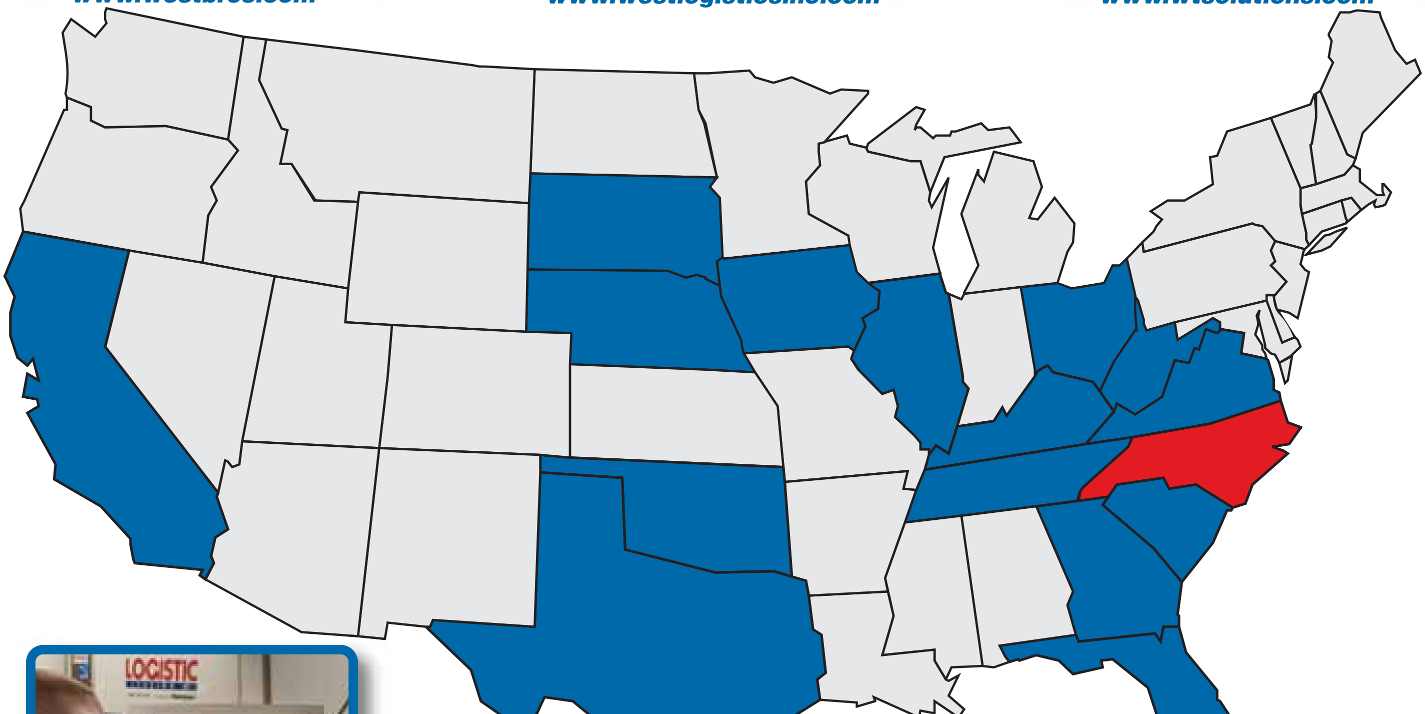

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motivating factor. At its core, reverse logistics must help companies efficiently handle returns and damaged or obsolete goods with an eye toward minimizing costs. Companies have championed recycling, repair, and remanufacturing operations because they realize concrete bottom-line benefits from these activities.

ELECTRONICS PLUG IN TO RECYCLING

One business sector that is championing these activities–and seeing the bottom-line benefits–is the electronics industry, largely because of skyrocketing growth in high-tech gadgets. Thanks to ever-changing technology, top sellers such as digital cameras, cell phones, video game systems, computers, televisions, and other electronic devices become obsolete in a few short years–leaving electronics manufacturers to deal with mountains of unwanted product.

For electronics manufacturers, recycling unwanted components is one key aspect of green reverse logistics. In 2007, Samsung, a global leader in the electronics industry, began its Recycling Direct program–partnering with take-back and recycling companies that do not incinerate, send materials to solid waste landfills, or export toxic waste to developing countries–and has since recycled 14 million pounds of waste from its consumer goods and IT products. The company has established drop-off locations across all 50 states in more than 200 fixed locations, where consumers can take unwanted electronics (both Samsung and non-Samsung brands).

"Our goal is to make it convenient for Samsung customers to recycle old TVs, phones, camcorders, printers, notebook computers, and other electronics at no charge," explains David Steel, senior vice president of marketing for Samsung North America.

The company has also teamed up with the U.S. Postal Service and third-party logistics company Newgistics to operate the Samsung Take-back And Recycling (S.T.A.R.) toner recycling program, which enables consumers to recycle used printer cartridges. Using a pre-paid Smart Label, customers can return old printer cartridges to Samsung by simply dropping them in any mailbox.

Through the S.T.A.R. program, Samsung ensures that empty cartridges are safely reprocessed into their major usable component materials (including plastics, metals, and packaging materials), then makes those reprocessed materials available for reuse in new manufacturing for a range of products.

"This program not only keeps our environment cleaner, but also helps set the standard for manufacturer responsibility in our industry," Steel says. "Our promise is that every returned empty cartridge is safely and responsibly recycled back into useful materials, and parts that cannot be recycled are treated and disposed of in a way that causes minimal environmental impact.

"We hold all our recycling partners to very high standards, auditing them twice each year, to ensure that we deliver on that promise," he adds.

Steel also credits the S.T.A.R. program with helping Samsung minimize the use of additional logistics operations in order to facilitate returns.

"By leveraging the existing infrastructure of Newgistics and the U.S. Postal Service, Samsung can conduct its recycling operations with minimal use of additional energy or materials consumption," Steel explains.

This approach to recycling returns yields convenience, as well as reduced time, energy, and resources for both Samsung and consumers.

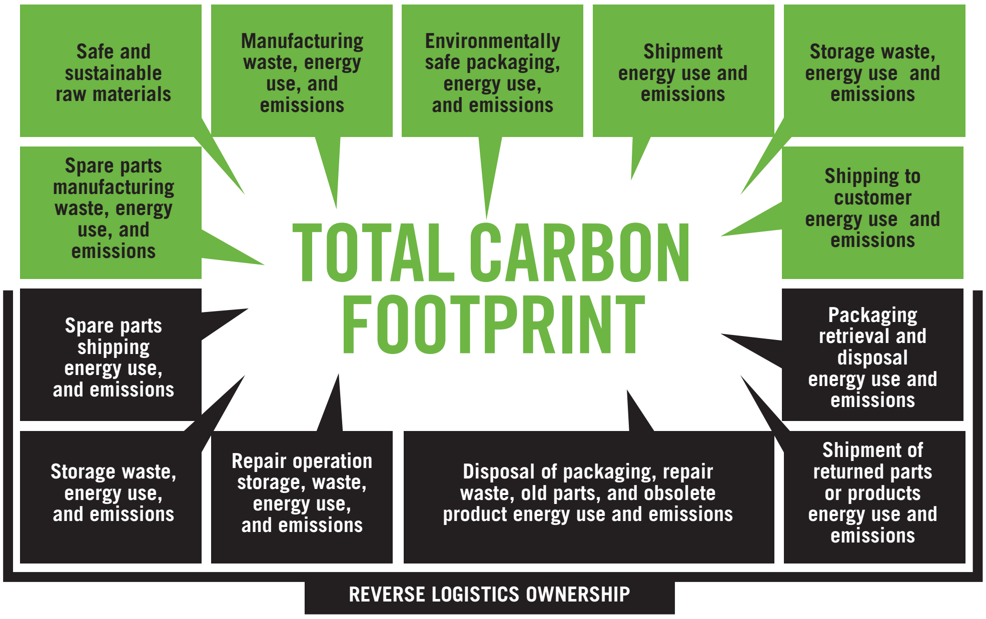
Electronics manufacturer Samsung launched its Recycling Direct program to save materials destined for incineration, landfills, and export to developing countries. To date, the company's customers have recycled 14 million pounds of waste through the program.

THE REBIRTH OF REMANUFACTURING

In addition to recycling, electronics manufacturers such as Samsung have realized that repairing damaged products and reusing the materials from obsolete or damaged goods–rather than simply disposing of them–is a green, cost-effective way of doing business. The

THE OUTLINE OF A FOOTPRINT

Numerous factors, including several classified as reverse logistics, comprise a company's carbon footprint, from manufacturing and storage waste to the energy used in retrieving packaging for disposal.



SOURCE: REVERSE LOGISTICS ASSOCIATION

higher price points of new technology items such as LCD and plasma screens has led to a rebirth of remanufacturing, with electronics manufacturers finding ways to put products back in the marketplace to generate additional revenue.

This line of thought is fairly new for electronics companies–and consumers. Used and refurbished products now sit on store shelves next to new goods as a perfectly acceptable option.

"This is a significant change that has occurred during the last five years or so. It is OK now to buy refurbished electronics; in fact, it has even become a selling point in some cases, because refurbished products are seen as being greener," ATCLE's Morris notes.

Once again, refurbishing also satisfies the executive suite's need to keep a lid on costs. Although a refurbished device will not bring full market value, it can still generate revenue to help reduce operational expense.

"If, for instance, an electronics manufacturer can refurbish and sell a device within 70 to 80 percent of the original cost, it makes sense and should be considered," says Morris. "Otherwise, the cost benefit isn't there and the expense can't be justified."

JOINING THE GREEN CLUB

Electronics is not the only industry benefiting from sustainable reverse logistics operations. Golf club maker Callaway, for example, routinely accepts trade-ins of used golf clubs; after replacing the grips, the company sells the refurbished clubs. Consumers get a discounted price, Callaway earns additional revenue, and the landfills stay that much emptier.

"Is that green? You bet it is. Does that make good business sense? You bet it does," says RLA's Vick.

Pharmaceutical companies are also getting a dose of green reverse logistics action. GENCO, a Pittsburgh, Pa.-based 3PL offering reverse logistics services, sends a large volume of pharmaceutical company returns to an incineration plant that converts the waste to energy in order to limit the environmental impact of the process. The plant creates two million kilowatt hours of electricity annually from this process, enough to light 220 homes for one year.

Another green reverse logistics example tracks to the rails: razor maker Gillette purchases high-caliber steel from worn-out rail tracks and uses it to manufacture its products. This partnership allows the railroads to dispose of unneeded steel in an environmentally friendly and cost-effective way, while helping Gillette cut purchasing costs and avoid the carbon emissions that would result from new steel production.

"Every industry should practice sustainable reverse logistics," Vick says.

TRANSPORTATION RIPE FOR REWARDS

Transportation is another major aspect of reverse logistics ripe for a green makeover. As with forward logistics, the execution of reverse logistics inherently

Post-Halloween returns activity surges bedeviled costume retailer Buy Seasons. Spooked by the inefficiency of its reverse logistics process, the online-only company turned to UPS Returns Flexible Access to streamline product flow back to its warehouse.

requires large transportation volumes, which carry all the environmental risks of pollution, emissions, and increased carbon footprint. How then to transport returns effectively while still striving for sustainability?

One company found the answer in a UPS Supply Chain Solutions program called UPS Returns Flexible Access, which allows customers to tender return packages at any UPS or U.S. Postal Service (USPS) location, including their own mailboxes. For Buy Seasons, an online retailer of costumes and party supplies, the Flexible Access program proved to be an environmentally friendly and cost-effective way to manage returns.

Buy Seasons, whose flagship Web site BuyCostumes.com is the leading online-only retailer of costumes and costume accessories, processes a huge chunk of its total return volume in October and November, fueled in large part by Halloween costume sales. From August through October, the company's daily volume of 4,000 to 7,000 shipments increases tenfold to 40,000 to 50,000 packages per day, so the number of returns also piles up after Halloween.

"We ship half our business volume in the ramp-up to Halloween; that big balloon of returns coming back in October and November has been ominous," says Terry Rowinski, vice president of operations for Buy Seasons.

Also scaring the company was the lack of environmental efficiency in its returns process. Because the company does not have an actual store, customers wanting to return merchandise had to drive to a postal location or UPS drop-off point. From there, additional transportation legs were required to ship the returns back to Buy Seasons' warehouse in New Berlin, Wisc.

GAINING FLEXIBILITY

To rectify both the operational and environmental inefficiencies of its returns process, Buy Seasons adopted UPS' Flexible Access program. Customers can now initiate a return, print a label, request package pickup, and track their return shipment online. They also have the option of dropping off return

packages at any USPS location, including a home or office mailbox–eliminating the need for extra transportation legs.

"With this solution, our customers can have their postal carrier or local UPS driver pick up the return parcel and inject it back into the USPS stream, which ultimately flows to UPS," Rowinski explains. "The consumer doesn't have to drive the extra miles to make a return, and UPS doesn't have to send additional trucks to make a pickup. It's convenient and it's green."

The UPS solution also gives Buy Seasons better visibility into its returns volume, which has made the company more prepared to handle it. "We can be more predictive when planning warehouse staffing. The solution gives us full tracking so we know on any given day whether to expect 90 returns or 400 returns," Rowinski says.

Holding reverse logistics transportation moves to a minimum in order to keep a lid on costs and carbon footprint is especially challenging for spare parts and service logistics operations.

"Reverse logistics is a critical aspect of the service parts supply chain. For every part that goes out, there's a part that has to come back," notes Todd Snyder, director of global service parts logistics solutions and implementations for UPS Supply Chain Solutions.

SPARING THE EARTH WHILE TRANSPORTING SPARES

The traditional process of executing service parts returns involves multiple steps, parties, and transportation legs–all of which add up to inefficient operations and wasteful environmental impact.

Typically, a field technician called to fix a copier, computer, or medical device receives a repair part from a field stocking location, performs on-site service, and has at least one defective part to return. The defective parts are usually shipped back to a third party's central DC, then out to the manufacturer for repair, and finally back to that DC to be restocked and reused.

"This is not an efficient or green method," Snyder says. "Because this process requires a lot of transportation, it is more expensive for the manufacturer and increases carbon emissions."

UPS' smart label program, Intelligent Authorized Return Services (IARS), helps

Continues on page 165

A virtual parts returns process helps Best Buy technicians determine whether to send damaged products to a remanufacturer for repair or to Fidelitone's facility (*below*) for recycling. The solution helps Best Buy cut freight costs and expedite parts return credits.

AN INSIDE LOOK AT REFURBISHING

Electronics repaired by technicians at ATCLE are sold as refurbished, which generates revenue, reduces operational expenses, and boosts the manufacturer's green efforts.

When a consumer returns an electronics product because it is outdated or not functioning properly, they don't likely give much thought to what happens next. But what happens next is at the heart of business for companies such as ATC Logistics & Electronics (ATCLE), which perform asset recovery, repair, and refurbishing services. Brian Morris, director of engineering for the Texas-based 3PL, gave *Inbound Logistics* a detailed explanation of the process involved in giving a returned product a new life:

"When we receive returns from customers, we do a test inspection to find out how many faults the product has. If there is nothing wrong with it, we can repackage it for sale. If it's a faulty product, we identify the failure and determine what it takes to repair or refurbish that product," Morris explains.

"The next step is to weigh the economics of the repair: given the cost of fixing a product, does it make sense to repair it? This goes back to the cost/benefit of conducting the testing and refurbishment processes. There must be an acceptable ratio to be profitable. The range is typically 70 to 80 percent of the product's original cost.

"If a product is deemed worth fixing, we put it through our repair and refurbishment operation, and it emerges like new," Morris continues. "If the product cannot be repaired, we look at its individual components. If the plastic housing is still in good shape, for instance, the plastic can be reclaimed and used to refurbish another product. Batteries are another key component. Most batteries are not exposed, so if they still hold a charge properly and are in good shape cosmetically, they are often put through reconditioning. After reconditioning, we use them as replacement batteries or sell them to other refurbishing operations. We also find uses for components such as keyboards and USB cables.

"Products with components that don't make the grade are sorted into containers and sent to a recycling house," he explains. "Recyclers crush and grind plastic components and send them to an injection mold facility, where that plastic is put back into production for new plastics manufacture. Circuit boards can be crushed and smelted, and the precious metals – such as titanium, copper, and small traces of gold – are removed and sold to another circuit board manufacturer or even a jewelry house.

"We are working to help manufacturers utilize refurbished and reclaimed parts so they can cut down on purchasing new parts. This helps them reduce costs, and it allows us to keep waste from piling up in landfills," Morris concludes.

Items that cannot be repaired and resold are harvested for components such as plastic, batteries, and precious metals, which can be given new life at recycling houses.

Continued from page 162

attack both issues. The smart labels provide field technicians a way to send defective parts directly back to a manufacturer for repair, instead of going first to a central DC for triage and sorting. The program essentially cuts a leg of transportation from each reverse move, providing a more sustainable and cost-effective way for service parts operations to manage reverse logistics.

"With IARS, companies can eliminate some inefficiencies and achieve a more sustainable reverse supply chain," Snyder notes.

BEST-IN-CLASS REVERSE OPERATION

Electronics retail giant Best Buy has developed a similar solution to manage its repair parts reverse logistics through a partnership with Fidelitone, a Wauconda, Ill.-based 3PL. The solution–a virtual parts returns process–has helped Best Buy greatly reduce freight emissions and logistical carbon footprint, while cutting millions of dollars each year in freight costs and expediting its receipt of credit on parts returns.

"Best Buy's order management and intelligence system gives field technicians the tools they need to make effective decisions so they don't waste money and natural resources on shipping products unnecessarily," explains Josh Johnson, Fidelitone's president.

Thanks to technology developed as part of the virtual parts returns process, Best Buy's field technicians have the ability to determine immediately–based on business rules set up by Best Buy–whether a defective part is eligible for remanufacturing or is unusable.

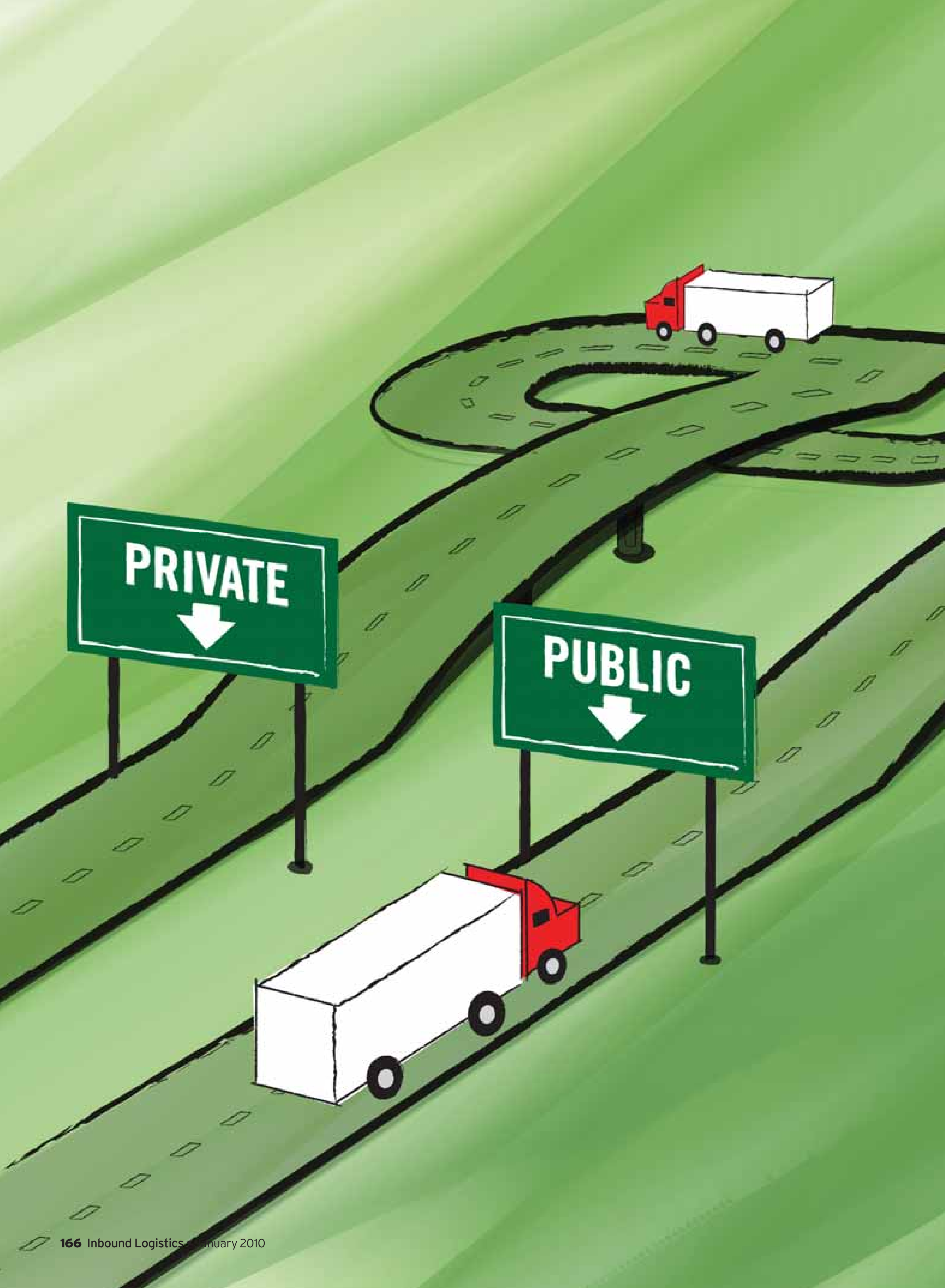
A technician at a customer's house repairing a flat-screen TV, for example, can take the damaged PC board out of the TV, find out where the replacement part was sent from, and determine what to do with the damaged part. If the PC board can be repaired, the technician ships it out for remanufacturing; if it can be reused or has value for its components, the technician will return it to Fidelitone; and if the PC board is unusable, it is disposed of immediately.

Having access to this information at their fingertips allows technicians to save Best Buy from engaging in unnecessary–and non-green–transportation.

"Shipping a product back to our warehouse or to another warehouse or remanufacturer only to have it thrown away is a sustainability nightmare because it's an unneeded leg of freight," Johnson says. "Companies seeking to minimize environmental impact from their returns operations need to bring technology and processes together to create a more cost-effective and sustainable supply chain."

Achieving a cost-efficient, sustainable reverse supply chain is now a priority for many companies. To accomplish that goal, they are combining the green mantra of "reduce, reuse, recycle" with the age-old supply chain wisdom of managing costs and stamping out inefficiencies.

The result? The reverse supply chain has never looked greener, or more efficient. ■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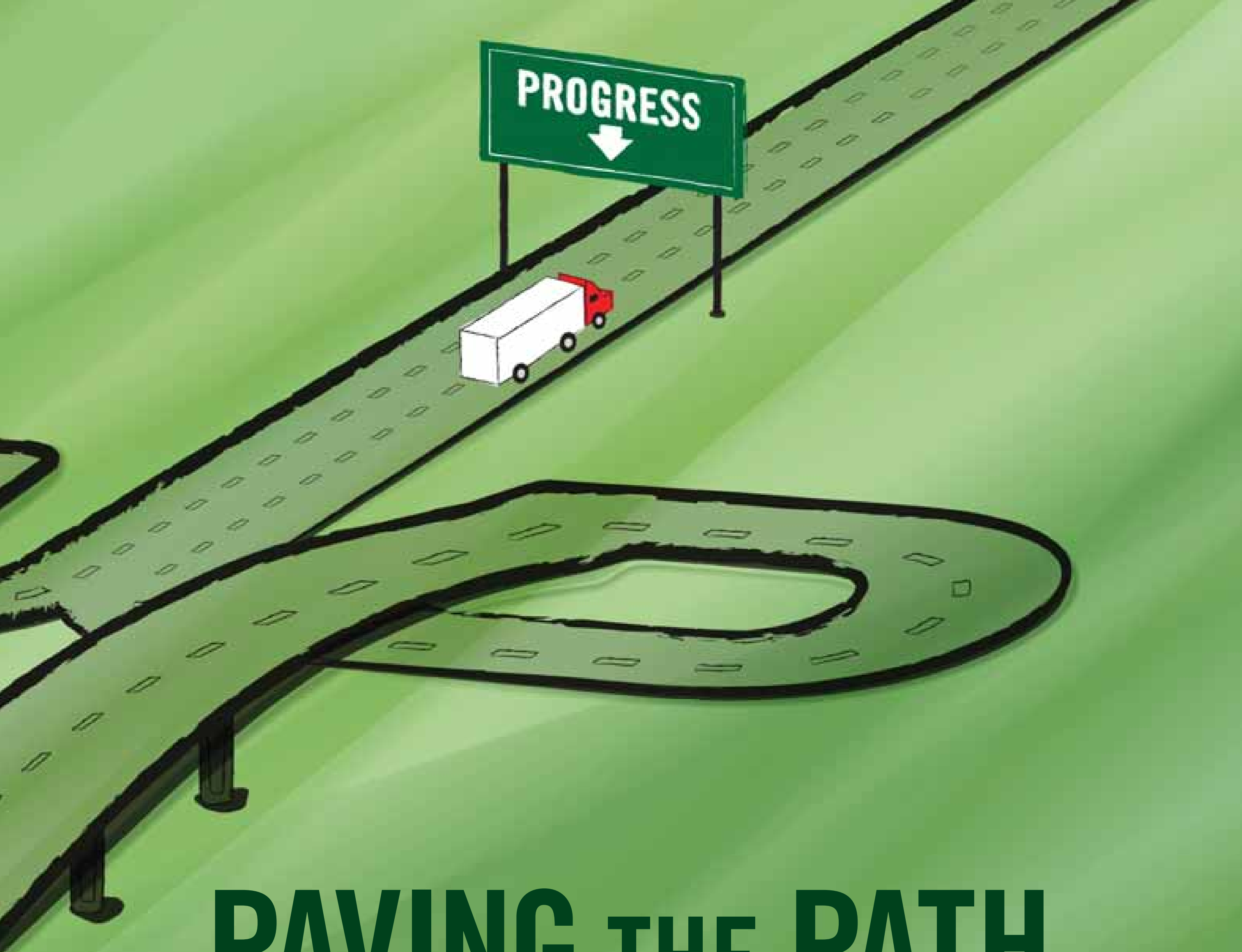
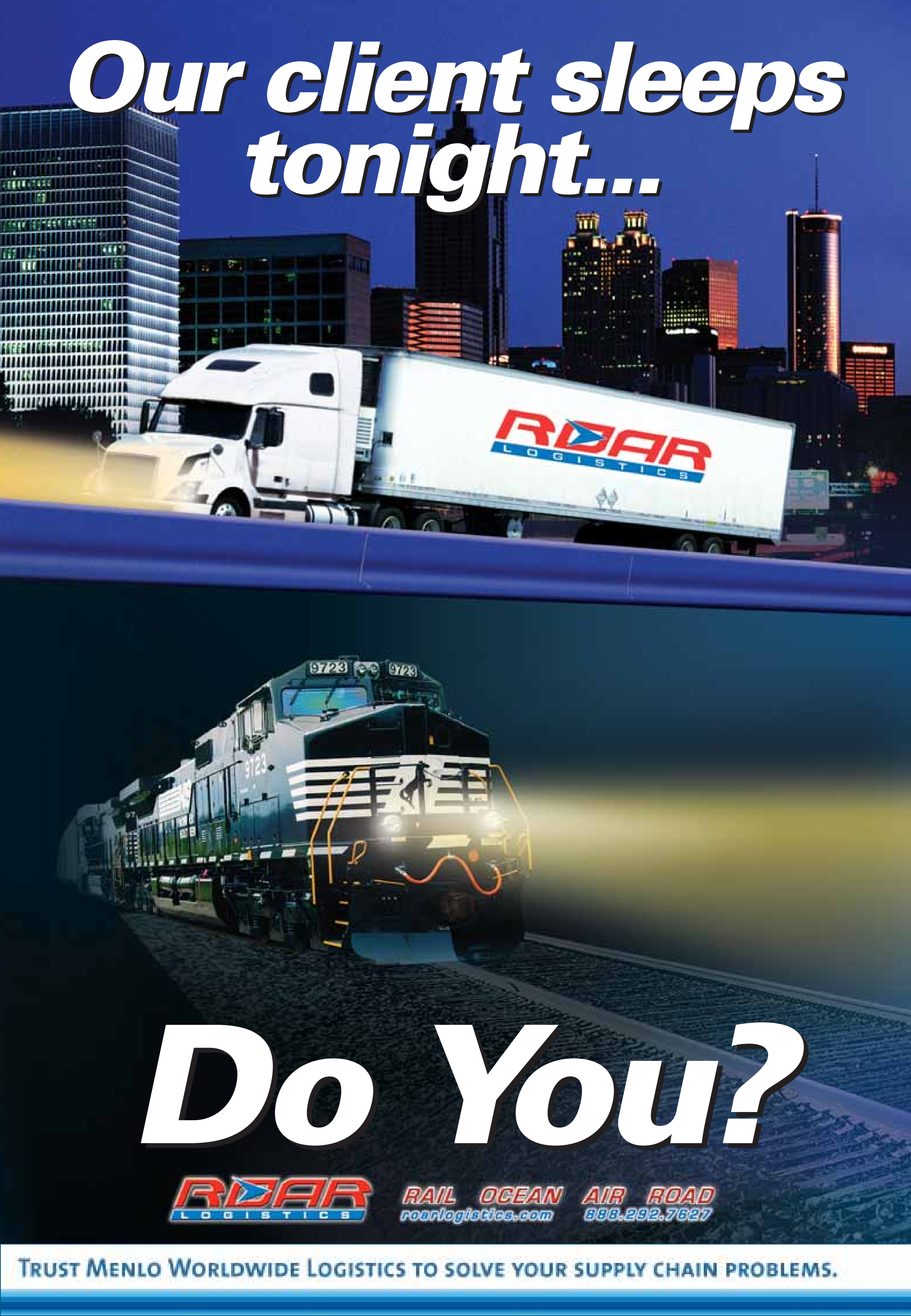


PAVING THE PATH TO PROGRESS

Can public-private partnerships transform America's ailing transportation infrastructure?

by Cindy H. Dubin

Many of the roads, bridges, and transit systems that freight travels on each day were built decades ago, paid for by previous generations. Many more have outlasted their original design life and need to be repaired or completely rebuilt. The wear and tear we put on U.S. infrastructure is tremendous because we are a more prosperous and mobile country than we were when these systems were built.



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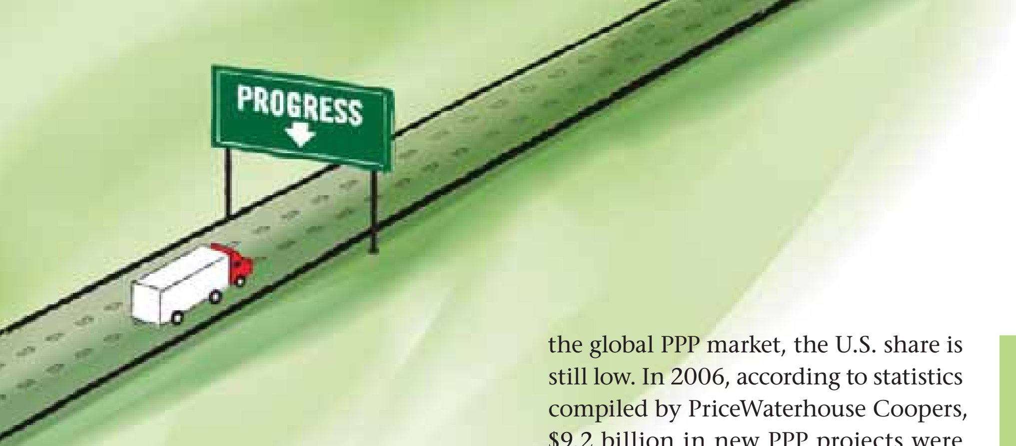

It will take more than $2.3 trillion over the next five years to elevate U.S. transportation infrastructure to an acceptable level, according to American Society of Civil Engineers estimates. Following decades of under-investment, the federal stimulus plan was meant to disperse an estimated $50 billion to transportation projects based on proposals submitted by each state. As of June 2009, 1.2 percent of the stimulus funds were used for such projects, according to an October 2009 report from Business Monitor International (BMI) and the U.S. Department of Transportation.

PPPs PROLIFERATE

In an effort to find more creative ways to fund transportation projects, state and local governments are turning to public-private partnerships (PPPs or P3s), government service or private business ventures funded and operated through partnerships between government and one or more private-sector companies. These agreements involve a contract between a public-sector authority and a private party, in which the private party provides a public service or project and assumes substantial financial, technical, and operational risk.

The use of this strategy has grown in the past two years, and the United States is fast emerging as the new frontier for PPPs, states BMI's *United States Infrastructure Report, Q4 2009*, which forecasts the value of U.S. construction projects will reach nearly a half-trillion dollars. In 2008, 18 states were involved in introducing PPP projects in their legislatures.

PPPs come in a variety of shapes and sizes – ranging from small service contracts to multi-billion-dollar concessions and divestitures. In relation to the global PPP market, the U.S. share is still low. In 2006, according to statistics compiled by PriceWaterhouse Coopers, $9.2 billion in new PPP projects were closed in the Western Hemisphere, representing 14 percent of the total PPP projects worldwide. PPPs heavily concentrate in the transportation sector, which accounts for more than 60 percent of PPP projects worldwide.

According to research from Halcrow and McGraw-Hill Construction, 92 percent of U.S. state and local officials are "interested" in PPPs, and 71 percent claim PPPs are attractive under today's economic conditions.

"We are faced with the great opportunity to lead with new thinking regarding infrastructure funding, particularly through vehicles such as PPPs," says Halcrow's North American President Michael Della Rocca. "It is within our collective ability to redefine the funding, procurement, implementation, management, and renewal of our infrastructure assets and provide a network that will make a positive difference to people's lives and to the broader wealth of America."

PPPs win private-sector support because they can help bring improvements crucial to supporting U.S. industry. "In order to remain globally competitive and move our goods and services effectively, we need to make infrastructure improvement a priority, and we need the financing to make that happen," says Harvey M. Bernstein, vice president, McGraw-Hill Construction. "PPPs can help fill this revenue gap, and state officials working with them are realizing the success they can offer."

Private investor involvement can also give projects a much-needed boost. "PPPs are powerful because they accelerate the delivery of projects by reducing the need for public expenditures and leveraging private markets," says Art Smith, chairman of the National Council for Public-Private Partnerships

U.S. INFRASTRUCTURE:
Worse for the Wear

When construction on the Interstate Highway System began in the 1950s, there were 65 million vehicles traveling 600 billion miles annually. Now there are more than 240 million vehicles, and they travel more than 3 trillion miles every year.

All this use has taken its toll on the country's transportation infrastructure, as demonstrated by the figures below:

- 33 percent of America's urban and rural roads are in poor, mediocre, or fair condition, according to the Federal Highway Administration.
- As of 2003, 27 percent of the nation's 160,570 bridges were structurally deficient or functionally obsolete.

Naturally, these conditions have dramatic effects on Americans:

- Driving on roads in need of repair costs U.S. motorists $54 billion per year in extra vehicle repairs and operating costs – $275 per motorist.
- Outdated and substandard road and bridge design, pavement conditions, and safety features are factors in 30 percent of all fatal highway crashes.

Road use is expected to increase by nearly two-thirds in the next 20 years, making transportation infrastructure improvements crucial. The tremendous scope of this need, and the funding required, has inspired the growth of public-private partnerships.

and president of PPP consulting firm Management Analysis, Inc.

Despite the benefits, the work that goes into making any PPP project a success can be a struggle for all those involved. Many transportation analysts agree the United States needs a new PPP paradigm that transfers more operational and financing risks to the private sector.

While dedicated public and private investment may set the wheels in motion, management issues associated with capital projects are increasingly complex for both public and private sector participants.

"PPPs are not a universal panacea for the country's infrastructure needs; they only work when there is a reasonable opportunity for private partners to recoup their investment," says Smith. "The revenue stream can be created in many ways–through user fees; periodic government payments; or rights to utilize a government asset, such as land or facilities, for commercial purposes. But when a plausible revenue stream can't be created, the success of a PPP is uncertain."

PPP PROFESSIONALS

PPPs can be immensely complex arrangements that require an array of professional legal, financial, procurement, and engineering expertise. It's important to ensure that both the public and private entities involved have the appropriate expertise. Frequently, this requires both sides to hire professional advisors who can lead them through the process and provide due diligence.

Without professional guidance, PPP projects can turn into a bumpy ride. One example is the Dulles Greenway in Northern Virginia. This privately owned and operated 14-mile toll road, which opened in 1995, connects Washington Dulles International Airport with Leesburg, Va. The roadway allows its users to avoid the congested public roads west of the airport.

The Greenway was built entirely with private capital. Under the partnership agreement, the private parties were to operate and maintain the road, retaining all the toll revenues, for 42 years. Then, the road would revert to the state. (This period has subsequently been extended to end in 2056.)

The private investors, however, overestimated the number of commuters willing to pay a toll, and from the outset revenue fell significantly below projections. The Greenway's operators tried various strategies, such as cutting tolls and implementing a frequent driver program modeled after the airlines. But the losses continued to mount.

The private partners requested financial relief from the Commonwealth of Virginia. But the legislature noted that the private partners had agreed to accept the "demand risk"–the risk that use of the road would meet projections–so it refused to provide financial assistance. It did, however, pass a law increasing the speed limit on the Greenway to make it more attractive to potential users.

The project was eventually restructured, and the original private partners lost much of their investment. The new operators continued to invest in and improve the road, and maintain it as an attractive alternative to free public roads. In 2005, with the growth of the Washington, D.C., exurbs, the Greenway turned a profit for the first time.

"For the citizens of Northern Virginia, the Commonwealth, and the current operators, this PPP project is a success," says Smith. "But for the original private partners, who incorrectly assessed the initial usage of the roadway, this was a painful experience."

PPPs may not be the solution to every infrastructure need, but they do "work for a collection of reasons that benefit the public, customers, and, in our case, the railroads," says Bill Schafer, director of strategic planning for Norfolk Southern. "With the support of public partners, we can improve freight service to shippers and projects can come to fruition faster."

PPPs are a flexible instrument to meet governments' transportation infrastructure objectives. Turn the page for a look at four PPP solutions in action.

"We are faced with the great opportunity to lead with new thinking regarding infrastructure funding, particularly through vehicles such as PPPs."

—**Michael Della Rocca,** North American Vice President, Halcrow

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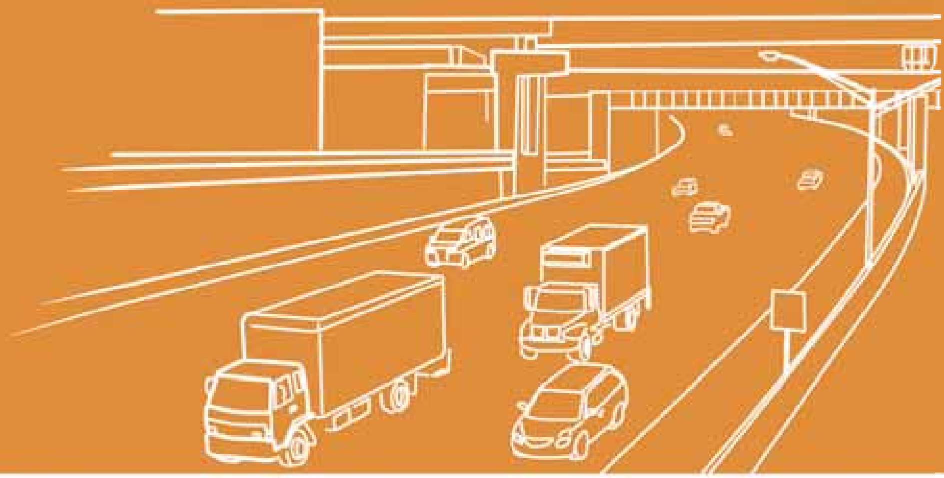

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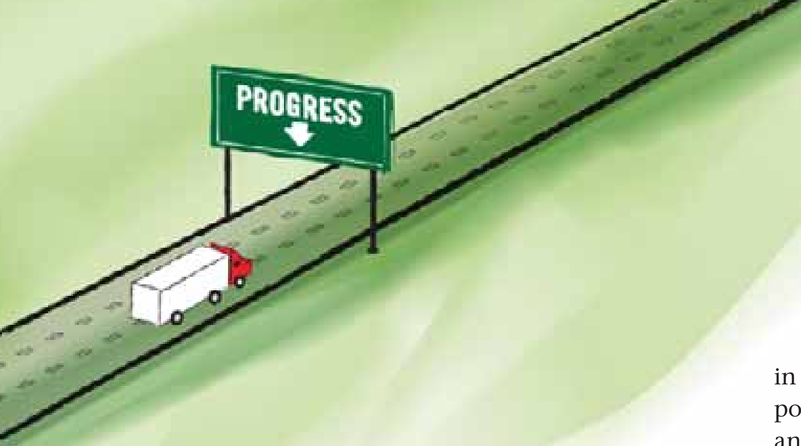

OHIO'S TRANSPORTATION FUTURE:

Interstate 70/State Route 29

The Interstate 70/State Route 29 (I-70/SR-29) intersection is becoming a major logistics hub in Ohio, attracting companies such as Kellogg's, FedEx, Honda, and Target to establish warehouses and distribution centers in the area. "Developers plan to build additional DCs in the area, which will place even more demand on the intersection," says Scott Varner, deputy director for the Ohio Department of Transportation (ODOT).

To meet this increased demand, the intersection requires major modernization and improvements, to the tune of an estimated $17-million price tag. ODOT and the local community are asking two area developers to commit $1.75 million each to help offset the cost.

The project, which is scheduled to begin as early as 2011, will be a key asset in Ohio's business logistics strategy. "Ohio is approximately one day's drive to 60 percent of the U.S. population," Varner says. "This project will improve access to I-70, which is a major freight highway."

While a PPP typically evolves out of a government's desire to make an improvement or offer a service, the I-70/SR-29 project is an example of private entities – the developers – pushing the public ODOT to change and modernize an area.

ODOT is also looking to develop future PPPs. For example, in April 2009, it approved a provision under the state's transportation budget to allow private companies to set up wind and solar power generating equipment on ODOT property. ODOT would use the power to light its highways, and could sell any additional energy to local power companies. The private companies would not pay for the ODOT space, and would maintain and operate all the local rest areas for a fee.

PPPs are important to the future of Ohio's transportation infrastructure. "Transportation investment has the greatest return on investment for job growth and economic development, which is why it is an important part of the stimulus bill," says Varner. "In Ohio, a large portion of our state gas dollars are limited to use on highways and bridges, not other projects. Transportation investment and flexible tools such as PPPs can help meet that need."

Ohio is also looking to foster future PPPs through legislation that would create Transportation Innovation Authorities (TIAs), which are formed by local entities in a community or region to raise money for a proposed transportation investment, such as an intermodal center. The fees generated are used to fund the project.

Varner offers another example of how a TIA project would work: "Suppose a city offers property tax abatements for a development project," he explains. "In lieu of these taxes, a property developer could make a cash payment to the TIA to help fund the project. The private sector benefits from the public sector contribution. This is a great tool to foster public-private partnerships and regional cooperation."

STATES COMING TOGETHER:

The National Gateway Project

Ohio is one of six states driving the National Gateway Project, a PPP notable for involving multiple public entities. Expected to cost $842 million, the project aims to create a more efficient rail route linking mid-Atlantic ports with midwestern markets, improving rail traffic flow between these regions by increasing the use of double-stack trains.

This PPP will upgrade tracks, equipment, and facilities, and provide clearance for double-stack intermodal trains through three major rail corridors: the I-95 Corridor between North Carolina and Baltimore, Md., via Washington, D.C.; the I-70/I-76 Corridor between Washington, D.C., and northwest Ohio via Pittsburgh, Pa.; and the Carolina Corridor between Wilmington, N.C., and Charlotte, N.C.

Among the project's goals is reducing road maintenance costs by converting more than 14 billion highway miles to rail. The benefits of this plan include improving safety, reducing CO^2 emissions by almost 20 million tons, saving more than $3.5 billion in shipping costs, and reducing fuel consumption by nearly two billion gallons.

"The project began because we realized there will be a significant increase

The National Gateway Project seeks to increase use of double-stack trains for moving cargo from mid-Atlantic ports to midwestern markets.

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- 670 acres Crossroads Business and Distribution Park on I-44
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- 50,000 square foot shell building, expandable to 100,000 square foot
- 139,000 square foot shell building, seven docks, 4,000 sq. ft. of office

Joplin Missouri

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in the volume of freight moving in the United States over the next 20 years," says Robert Sullivan, director of media relations for rail carrier CSX Transportation. "The challenge is preparing the transportation infrastructure to handle the traffic."

SECURING THE FUNDING

CSX brought together a coalition of states–Pennsylvania, West Virginia, Ohio, Maryland, Virginia, and North Carolina–as well as shippers and shipper organizations. The states applied for $258 million in Transportation Investment Generating Economic Recovery (TIGER) grants, funded by the American Recovery and Reinvestment Act of 2009. These grants, which are awarded on a competitive basis, are supplementary discretionary funds for the National Transportation System, which appropriates $1.5 billion to invest in surface transportation projects that will have a significant impact on the nation or a metropolitan region.

The project will also secure $30 million from Ohio and $421 million from CSX and its affiliates. "The return on public investment is $22 for every one dollar invested, in addition to job creation and environmental benefits," says Sullivan.

The benefits to shippers are also significant, "as this project will open new markets and make them more accessible," says Sullivan.

One group of shippers that expects to get product to market faster and more cost efficiently is soybean farmers in Ohio, represented by The Ohio Soybean Council. More than half of the soybean crop is exported, and a growing percentage of those exports are containerized.

Currently, soybeans are shipped in containers from Ohio to Chicago, then railed to the West Coast. "The National Gateway Project gives us another way to get our product to market in containers," says Kirk Merritt, director of international marketing, The Ohio Soybean Council.

Ohio soybean farmers will be able to take advantage of a state-of-the-art intermodal terminal to be built in North Baltimore, Ohio. The farmers will double-stack product on containers in Ohio and transport them by rail to the North Baltimore terminal for export to Asia.

"Ohio is growing as a logistics hub, which benefits our industry," Merritt says. "Containerization provides an opportunity for farmers to control the quality of soybeans destined for Asia, as well as manage the supply chain more effectively by placing RFID tracking tags on the containers."

Photo Credit: United Soybean Board

With half of Ohio's soybean crop being exported, the faster transit time to market promised by the National Gateway Project's new intermodal terminal amounts to more than a hill of beans for soybean shippers.

The National Gateway Project estimates that the new developments will enable one- to two-day service to the East Coast, as well as improved time to the West Coast. "Even a day or two can make a big difference," Merritt says.

The extent to which the National Gateway Project's partners will benefit from their efforts is not yet known, but they have already begun to see results. A CSX Intermodal terminal began operations in September 2007 in Chambersburg, Pa., and the North Baltimore facility is scheduled to open soon.

The future promises new developments, as well. Work has already begun on 61 double-stacked rail clearance projects along the freight rail corridor. The balance of the upgrades will be completed as early as 2012, but no later than 2015.

NEW ROUTES MAKE TRACKS:

The Heartland and Crescent Corridors

Norfolk Southern (NS) hopes that the Heartland Corridor will do for it what the National Gateway will do for CSX. The Heartland Corridor is a PPP aimed at giving NS the ability to use double-stack containers, enhancing rail infrastructure and increasing freight capacity between the Port of Hampton Roads, Va., and the Midwest.

Before the Heartland Corridor project, Norfolk Southern's most direct route to and from the Port of Hampton Roads had substandard clearances, requiring double-stack trains to take circuitous routes. In 2000, the wheels were set in motion to generate a PPP between the railroad and Virginia, Ohio, and West Virginia to raise 28 tunnel clearances on NS's line.

During this time, ocean carrier Maersk Line built a $450-million terminal in Virginia to bring more containers through the port, increasing the container volume handled between Hampton Roads and the Midwest. In response, Norfolk Southern and federal and state governments jointly funded the $151-million Heartland Corridor project.

Due to be completed in June 2010, the Heartland Corridor will cut 200 miles and one day's transit time from current rail routes. The benefits to the states are significant: Virginia gains an enhanced port and more direct double-stack service to the Midwest; Ohio taps into a new intermodal terminal in Columbus; and West Virginia will build its first intermodal facility, thanks to a land donation by Norfolk Southern. And, Norfolk Southern can better serve its customers.

The Heartland Corridor improvements raised clearances in 28 tunnels on Norfolk Southern's line, allowing passage of double-stack trains.

"We were so pleased with the results of the Heartland Corridor that we decided to institute a PPP to help us deliver services we don't currently offer," says Norfolk Southern's Schafer. And so the Crescent Corridor was born.

While the Heartland Corridor was based on transporting international traffic to and from the port, the Crescent Corridor is focused on improving double-stack intermodal service for domestic freight between the Northeast and Southeast.

Public partners include Alabama, Tennessee, Pennsylvania, Virginia, and Mississippi. In September 2009, the partners applied for a $300-million grant to help fund the project, which will improve a 2,500-mile rail network between the Northeast and Southeast.

During the past two years, NS has been working to eliminate chokepoints by adding main line tracks and new signal systems to accommodate more intermodal trains, thanks to early funding from the Commonwealth of Virginia. Future work will include laying additional track in other Crescent Corridor states, as well as modifying curves, constructing and expanding terminals, and running more efficient lanes.

These improvements will yield big public benefits, as they help trucks and trains–in partnership–capitalize on their strengths. For trucks, that means moving freight short distances; for rail, moving freight long distances. More than one million trucks annually will be absorbed from the paralleling interstates once the Crescent Corridor service is fully implemented, which will save 170 million gallons of fuel. Additionally, the Corridor will create an estimated 73,000 jobs by 2030, 47,000 of them by 2020.

The first Crescent Corridor trains are expected to be in operation by 2012.

PPP FUNDS OREGON PORTS:

The Infrastructure Finance Authority

Creating jobs through public-private partnerships is important to Oregon. So is securing state funding in support of those partnerships. That's why Oregon formed the Infrastructure Finance Authority (IFA). The mission of the IFA is to ensure that the state's infrastructure needs are identified and prioritized accurately to make the best use of its resources. Members of an independent IFA board, appointed by the governor, oversee the Authority.

The IFA helps Oregon communities build infrastructure and public facilities, and address their development needs by creating timely, fiscally responsible funding solutions, explains Lynn Schoessler, deputy director of Oregon Business Development and IFA director.

"PPP projects supported by IFA are becoming increasingly popular in Oregon because the state has limited financing resources," says Schoessler. "Neither the state nor its local businesses can fund infrastructure projects alone."

One key PPP project currently on the table in Oregon is financing a 2010 statewide port plan. The state's legislators are interested in addressing the future needs of the ports and port activities.

"The IFA will subsequently fund local port projects to meet their individual objectives and to ensure that they comply with the state's plans," says Schoessler.

Oregon's 23 ports want to grow their existing business lines to include marine, air, and surface transportation; industrial property development; tourism and recreation; and marine-dependent facilities. The statewide Port Strategic Plan will act as a business guide to better define the relationship and accountability between the ports and the state.

The plan also seeks to create a state port investment fund, with financing components based on port size and market differences. The funds will address the state's highest port priorities based on need, job creation, ability to advance Oregon's key industries, and financial ability to operate and maintain the investment. The ports will be expected to issue periodic accounting reports on how they are using state grant funds.

The statewide port plan will address the negative cash flow occurring at many of the ports, support maintenance and infrastructure needs, and bring more jobs to the state as one in six Oregon jobs are tied to port activities or cargo.

Another Oregon port project expected to bring jobs to the state is the proposed relocation of the National Oceanic and Atmospheric Administration (NOAA) from Seattle to the Port of Newport. NOAA has signed a 20-year lease to move its Pacific Research Fleet and new West Coast headquarters to Newport beginning in 2011. This deployment will relocate 175 crew members and 75 support staff and their families to the Oregon Coast.

"The positive economic impact of this decision cannot be underestimated and reflects the work of local economic development and port officials, as well as state legislators," says Schoessler. ■

One PPP item high on Oregon's priority list is a statewide plan that funds local port projects, including infrastructure development, new facilities, and air and surface transportation. These improvements also help create jobs.

MAP LEGEND

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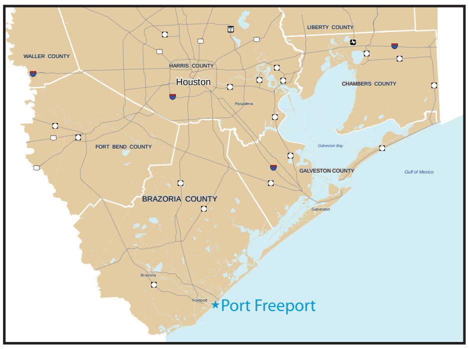

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What's happening South of the Border? For an update on customs, infrastructure, and manufacturing, *IL* went straight to the supply chain leaders and economic development experts who make Mexico their business.

ASK *the* (M)EXPERTS

(M)EXPERTS ASK *the*

Q

U.S. and multinational companies have been looking to grow their interests in Mexico in terms of sourcing, manufacturing, and selling finished goods. U.S. transportation and logistics service providers have followed suit. What impact are these investments having on Mexico's domestic market and as a supply chain conduit for products moving in and out of the United States?

JOHN LARUE, executive director, Port Corpus Christi: As Mexico has become an alternative to expensive overseas outsourcing destinations, demand has increased for transportation, customs brokerage services, and regional warehousing companies. 3PLs have settled in inland ports such as Querétaro, San Luis Potosí, and Toluca, which are served by Kansas City Southern and/or Ferromex rail, and coupled with trucking companies including J.B. Hunt and Schneider.

GUILLERMO CHAVEZ, business development manager, Meridian 100°: Investments near the border rely on U.S. interest in a competitive labor force and the fast time to market these locations provide. The challenge now is to foster development and investments in other regions within Mexico. The future rise of oil prices will prompt businesses to move manufacturing centers nearer to consumption centers. The Mexican government wants to turn the country into a major logistics hub, so the logistics infrastructure must be modernized to support connectivity, investments, and job creation throughout Mexico.

MARIO RODRÍGUEZ DE LA GALA, senior director for transportation, Mexico, DHL Supply Chain: In the past 20 years, Mexico's growth and related infrastructure improvements have been significant. Before, adequate warehouses weren't available; if a company needed a facility, it had to invest its own resources to build one. Today, several national and international firms have invested in industrial parks, including build-to-suit and speculative space. The type and age of truck fleets has evolved, and road, airport, and rail infrastructure has improved.

Service providers have grown from local to state presences, and there are more international providers. Potential investors can be assured that feasible network alternatives for business in Mexico do exist.

EUGENIO SEVILLA-SACASA, vice president and managing director, Ryder Mexico: Mexico has attracted large direct and indirect foreign investment, as evidenced by standard-of-living improvements for the average Mexican over the past several years, as well as new manufacturing plants and highway development.

MEET *the* (M)EXPERTS

Pete Montaño, Executive Vice President, Sales, Con-way Truckload
Montaño is responsible for strategic sales planning and training for the United States, Canada, and Mexico, as well as for the sales force at Con-way Truckload and Con-way Truckload de México. With more than 17 years at Con-way Truckload, he has been active in expanding product offerings to shippers, including dedicated operations and regional services.

Edgar Guillaumin Ireta, Assistant Vice President, Corporate Affairs and Right of Way Protection, Kansas City Southern de México (KCSM)
Ireta negotiates with the Mexican government and business organizations, and is a key participant in strategic projects on behalf of KCSM. He is president of the American Chamber's Logistics Commission.

John LaRue, Executive Director, Port Corpus Christi
LaRue oversees the day-to-day operations of the port. He also serves as treasurer of the Port Industries of Corpus Christi; chairman of the International Refrigerated Transport Association; and chairman of the State of Texas Department of Transportation Port Advisory Committee.

Q Well-publicized security and safety breaches, theft, and the recent overhaul of Mexican Customs raise red flags for businesses looking to invest in the country. How are the government and private sector addressing these issues?

DE LA GALA, DHL Supply Chain: Some private sector companies are dealing with security issues by not doing business across the border. This is a no-win situation for all involved. The companies that are doing business usually pay a price, either by taking more secure but longer routes or by adding security services to ensure products will reach their destination.

Although companies are on the right track, the Mexican government still needs to gain consistency in its results and, more importantly, the trust of investors.

LaRUE, Port Corpus Christi: The government has imposed new rules that "rotate" Customs officials' posts periodically. In addition, most import/export documentation, as well as fee payments, are now performed electronically and supervised by the Finance Ministry. Work continues on the freeways' physical infrastructure, however, as many U.S. drivers are not eager to venture inland into Mexico because safe rest and refueling stops are limited.

SEVILLA-SACASA, Ryder Mexico: One way the government and private sector are addressing these issues is the Customs-Trade Partnership Against Terrorism (C-TPAT), a joint initiative to improve supply chain security. Companies that participate in the program benefit not only from expedited border crossings, but also from a closer working relationship with U.S. Customs and Border Protection.

Businesses looking to reap the benefits of production in Mexico must invest a portion of their savings in increased operations and supply chain security. Typical security investments include fortifying their operations with gates, walls, and fences; installing security systems; increasing security staffing and resources; vehicle tracking; private canine screening; and increased inspections and security procedure audits.

PETE MONTAÑO, executive vice president, sales, Con-way Truckload: Due diligence in selecting the right carrier and understanding the nuances of the law, such as how cargo insurance works, will ensure successful operations in Mexico.

For example, with 2,200 trailers within Mexico daily, Con-way Truckload is selective about the carriers it works with, particularly as it relates to equipment control. We've developed relationships with 80 Mexican carriers – all of which are or will be C-TPAT-certified – and have a comprehensive system in place to track equipment. These arrangements translate into reduced risk of security breaches.

CHAVEZ, Meridian 100°: From financial services to blue-chip companies, many of the world's most important businesses operate in Mexico. Throughout 2009, American automotive companies such

MEET the (M)EXPERTS

Eugenio Sevilla-Sacasa, Vice President and Managing Director, Ryder Mexico
Sevilla-Sacasa is responsible for Ryder's company operations, sales, and support functions in Mexico, as well as cross-border operations between the United States and Mexico. He joined Ryder in 1983.

Mario Rodríguez de la Gala, Senior Director for Transportation, Mexico, DHL Supply Chain
In 15 years with Exel, now DHL Supply Chain, de la Gala has held a number of positions in the United States, Mexico, and South America, including country manager for Argentina and Chile.

Guillermo Chavez, Business Development Manager, Meridian 100°
Chavez's experience lies in new venture creation and business model strategy. He has been instrumental in developing Meridian 100°'s value proposition, identification, and coordination of strategic advisors. Meridian 100° is a privately owned, Mexico-based logistics infrastructure developer.

as Ford, Chrysler, and GM invested in expanding their Mexico facilities, a sign of confidence in the country's business environment. Problem areas are being improved, particularly those related to cargo security on Mexico's highways and at the border.

This progress is partly due to groups such as the American Chamber of Mexico, a non-governmental organization (NGO) whose members account for half of Mexico's foreign direct investment. The group addresses the diverse issues that concern its membership and fosters continuous cooperation between U.S. and Mexican customs and trade offices.

NASCO, a tri-national NGO with public and private sector members, has served for nearly a decade as a high-level meeting point to analyze and discuss matters concerning transportation, security, and the environment. NASCO has become influential, and earned the respect of the three countries' governments for addressing topics such as cross-border truck transportation and security.

Advances in technology, particularly tracking and surveillance, are key to cargo security issues. Mexican government development policies, such as the recently created free trade zones, are also a sign that Mexican authorities aim to provide a secure, competitive, and world-class business climate.

Q NAFTA is 15 years old, yet major trade integration issues between the United States, Mexico, and Canada still exist. What are these challenges, and how can Mexico and the United States collaborate to meet them?

LARUE, Port Corpus Christi: Though Mexico has substantially improved its regulatory transparency and implemented new commerce laws in recent years, the government has been slow in changing the regulatory structure for business. For example, it takes approximately 74 days to start a business in Mexico. It takes five documents and 17 days to export a standard shipment. On the U.S. side, NAFTA rules allowing Mexican truckers to enter and transit U.S. roads with their cargo need to be enforced.

Despite the complications, NAFTA has expanded the U.S. economy, and it has driven Mexico to openly commit to economic and political advances.

EDGAR GUILLAUMIN IRETA, assistant vice president, corporate affairs and right of way protection, Kansas City Southern de México: The main difficulty in improving Mexico's infrastructure is the financial planning and engineering required to attract investors to viable projects, and the U.S. Embassy can be very helpful in that regard. One improvement is creating a North American Infrastructure Bank to promote and guarantee funds to finance infrastructure projects in both countries, but specifically in Mexico. Another effort is channeling U.S. stimulus funding into important infrastructure projects, such as highways, bridges, and water and power generation facilities, along the U.S.-Mexico border. Before investing scarce public funds in new infrastructure projects, it is imperative to use existing border infrastructure to its fullest potential by making process reforms that streamline border crossing.

Other steps to encourage the continued support of U.S. agencies in developing needed infrastructure projects in Mexico: financial support for the U.S. Trade and Development Agency to conduct market research and prepare technical studies; increase the services offered by the Overseas Private Investment Corporation for infrastructure projects in Mexico; and additional funding for the North American Development Bank.

CHAVEZ, Meridian 100°: Cooperation among NAFTA members must aim to foster competition as a trade bloc with other commercial blocs such as the European Union, the Middle East, and Asia. Advances in the three countries' infrastructure will create competitive conditions that will attract investment and create jobs in Mexico, Canada, and the United States.

SEVILLA-SACASA, Ryder Mexico: NAFTA has produced benefits for all participants, but trade partners will always deal with issues and challenges. They must maintain communication channels to collaborate on finding solutions that are fair to all parties.

(M)ASK the EXPERTS

Q Mexico's ports have helped ease congestion at U.S. West Coast ports and present a back-door transport option into U.S. markets. With Panama Canal expansion imminent, and continued investment in rail/intermodal links with the United States, what are future expectations for Mexico's ports?

LaRUE, Port Corpus Christi: Container trade into or through Mexican ports will continue to grow. Kansas City Rail invested more than $400 million in terminal facilities and upgraded tracks from the Port of Lázaro Cárdenas to Laredo to support this trade. A second container terminal will be constructed at the Port of Manzanillo, with an expected investment of $563 million. When construction is completed by 2014, the terminal will be able to handle up to two million containers.

CHAVEZ, Meridian 100°: Despite 2009's global economic turmoil, which caused a drop in container trade to North America, forecasts by major port operators and maritime companies project a tremendous growth of goods heading to the North American trade bloc. West Coast ports will become more congested, and ports on Mexico's Pacific coast will continue to function as a bypass.

For both the United States and Mexico, the majority of consumption occurs in the East Coast states. Port developments in Canada, Mexico, and the United States – as well as the Panama Canal expansion – are necessary to handle the trade that will develop in the next decade.

Mexico will benefit from container trade increases if it can provide world-class port infrastructure and attract major global port operators while allowing a healthy competitive climate.

Mexico's most important challenge is to provide the right business environment to encourage ambitious logistics infrastructure development, continuity, and government support.

IRETA, KCSM: Most Pacific ports, in both the United States and Mexico, suffer operational crises and congestion due to lack of available space. This causes a decline in competitive markets because loading and unloading times do not meet industry demand.

These areas are located on the Lázaro Cárdenas route to the north border in Nuevo Laredo through the KCSM International Intermodal Corridor, which starts at Lázaro Cárdenas and crosses the country's north border.

The Port of Lázaro Cárdenas provides the greatest capacity in Mexico and is considered the most important gateway between the commerce of the Far East, Mexico, and the southeastern markets of the United States.

Mexican and U.S. Gulf Coast ports, such as the Port of Corpus Christi, take pressure off U.S. West Coast ports handling heavy lift cargo.

Q Some insiders cite nepotism, corruption, and political mismanagement in Mexico's government as reasons for its economic struggles. Is this still a problem, and how are officials breaking down these ingrained barriers to change?

DE LA GALA, DHL Supply Chain: Local and state officials used to operate without transparency because they did not need to be invested in their communities when they could depend on federal government resources. With oil reserves dropping, however, individual and corporate taxation has increased, and officials know they must now compete among themselves for private sector money. They will be subject to more scrutiny.

LARUE, Port Corpus Christi: Reports indicate that more than 70 percent of businesses have been victims of fraud, and they report losses of hundreds of millions of dollars. The government has to amend the legal system and enforce it at all levels.

IRETA, KCSM: The authorities need to eliminate impunity because estimates indicate that 80 percent of cargo theft victims do not report the crimes. Between 2006 and 2008, approximately 99 percent of the criminals in cargo theft cases were not convicted, according to Mexico's National Commission of Human Rights.

The government can confront transportation vandalism and theft, but the police force needs to be purged

of corruption if it is to participate in security efforts. Exchanging classified information among specialized security companies and the authorities will help enhance intelligence and generate the statistical data needed to develop crime prevention and cargo protection strategies for goods in transit.

An effective security model that reduces crime helps lower the transportation industry's insurance premiums and discourage black market activity.

CHAVEZ, Meridian 100°: The Mexican government is allowing international organizations to criticize, evaluate, and rank its programs, initiatives, and secretaries to determine the issues that must be improved.

Q With the growing promise of West Coast ports such as Manzanillo, how will further development in the country's interior, and a more balanced national transportation network, aid Mexico's trade competitiveness?

MONTAÑO, Con-way Truckload: Mexico is taking the appropriate steps to position itself as a more attractive global trade partner by focusing on transportation infrastructure repair, improvement, and growth. This development is critical for U.S. businesses seeking to leverage Mexico's proximity to manufacture products and quickly serve the ever-changing demands of U.S. consumers.

The Port of Manzanillo – one of Mexico's busiest – reflects the country's commitment to strengthening and developing its transportation infrastructure. In fact, under Mexico's National Infrastructure Program, the country will focus on increasing infrastructure coverage, quality, and competitiveness by adding new ports, modernizing existing ports, and further developing its highway network. Additionally, by enabling its currency to flow freely with minimal restrictions, Mexico has made it easier for companies to do business.

LARUE, Port Corpus Christi: In addition to the Port of Manzanillo, the Port of Lázaro Cárdenas is helping Mexico manage its growing trade. Combined, the two ports handle more than 1.5 million containers per year.

In addition, Kansas City Southern and Ferromex have invested heavily in track and equipment infrastructure to expedite rail transit of containers to and from Manzanillo and Lázaro Cárdenas. The Mexican government has also invested in new freeways connecting these ports to Guadalajara and Mexico City.

IRETA, KCSM: The National Infrastructure Program is promoting Mexico's economic and social development. The country's political and economic context, however, creates obstacles to meeting these goals.

The private sector has invested millions of dollars in improving infrastructure for the freight industry since its privatization in 1997. We're moving more cargo, more safely than ever before in Mexico's history. Rail is good for the entire North

Warehousing, distribution, and transportation providers such as Ryder have expanded their service offerings to support Mexico's manufacturing growth.

American trading bloc, and its inherent environmental, security, and safety advantages are being realized after decades of neglect in Mexico.

For the rail industry to reach its full potential, however, public investment in urban infrastructure, such as overpasses, is needed.

Currently, it takes approximately 8.5 hours for a freight train to travel the 128 miles along the Lázaro Cárdenas intermodal corridor to Nuevo Laredo because about half the tracks are located in urban areas, where the top speed allowed is 12 miles per hour. In yards, the top speed allowed is 19 miles per hour.

By contrast, in the United States and Canada, the average speed allowed is 25 miles per hour and it only takes about five hours to travel 128 miles. With a better rail system, transit through Mexico could be as efficient as in the rest of North America.

CHAVEZ, Meridian 100°: Despite China's rise in global consumption, the North American trade bloc will remain the biggest consumer market in the world. Proposed infrastructure developments for northeast Mexico will speed existing trade with the United States.

But rather than continue the dependence on bilateral trade with the United States, Mexico's National Infrastructure Program envisions establishing the country as a major global logistics hub for trade moving to North America from Southeast Asia, South America, and Europe.

Port developments are now being fostered on Mexico's west coast at the Port of Lázaro Cárdenas and the Port of Manzanillo, at the Port of Punta Colonet in Baja, Calif., and in the Gulf region. New logistics corridors are also being designed to link the east and west coasts, and to connect the more developed northern states with the south.

Q In Mexico's maquiladora manufacturing facilities, goods spend as little time as possible in-country before being re-exported. Does this hurt sustainable economic development, which values quality as much as cost? Is Mexico embracing or distancing itself from maquiladoras?

LaRUE, Port Corpus Christi: Until 1990, the maquiladora industry was booming in northern Mexico. Then, more than 60 percent of the maquila production left Mexico, drawn by cheaper labor costs in China. Now, because of transpacific ocean transportation's high costs and long transit times, U.S. and Mexican manufacturers are returning to Mexico's near-sourcing manufacturing arena.

DE LA GALA, DHL Supply Chain: Maquila activity will remain part of Mexico's reality. The country's leadership seeks to develop a stronger and more competitive industry that not only engages the national market but is also capable of competing in other markets. In both instances, quality is a non-negotiable element.

CHAVEZ, Meridian 100°: As the world emerges from global economic turmoil, companies will continue relocating their manufacturing centers to be closer to their core markets. For Mexico, this represents an opportunity to evolve its maquiladora industry into specialized and value-added manufacturing, seizing the distinct competitive advantages of its geographical location and low labor costs.

IRETA, KCSM: Mexico depends on the foreign investment its maquiladora industry receives, 60 percent of which comes from the United States. Trade has quadrupled during the past 12 years, and if this growth continues, there won't be enough infrastructure to support it.

Mexico needs productive jobs that ensure the population's security, respect the environment, and provide accessible and high-quality services. The rail industry can contribute to this goal if it invests in infrastructure such as track, maintenance, and facilities; technology and communications; locomotives, cars, and equipment; and personnel, jobs, and training.

SEVILLA-SACASA, Ryder Mexico: The maquiladora program provides a combination of foreign capital and low labor costs in support of the export market. There is no conflict between low cost and high quality. Currently, many products manufactured in Mexico under the maquila program are both high-quality and cost-competitive on a global basis.

Q What impact do U.S. and Mexico cross-border inland ports have on trade and logistics options for companies shipping in and through Mexico?

LaRUE, Port Corpus Christi: Laredo will continue to be the most important entry and exit point for goods and services. Heavy investments in industrial parks, 3PLs, and bridges are in progress. Companies such as Meridian 100° and GENCO are working toward inland port infrastructure, with free trade zones on both sides of the border to expedite shipment flow.

In addition, Kansas City Southern is in the process of concluding studies and permits to construct a rail bridge south of Laredo, which will reduce transit times.

IRETA, KCSM: The inland ports face problems such as land-growth limitations, deficient rail infrastructure, outdated equipment, and cargo security. But these facilities are strategically located relative to the main ports and the busiest border-crossing point at Laredo. They're the first connection point with the country's main markets, such as Mexico City, and offer direct connection with the rails and main highways. The inland ports help fulfill shippers' intermodal and transload cargo transfer requirements.

Q Why is it so important that the U.S. and Mexican governments continue working in concert to build stronger trade ties? What challenges do they still need to address?

CHAVEZ, Meridian 100°: Even with world-class logistics infrastructure such as ports, highways, and rail systems, the Mexican logistics system will not be globally competitive without the development of inland ports. Each region has a different competitive advantage and logistical value, and their projected inland ports must envision the most effective infrastructure use, either by operating existing facilities or developing new ones.

Mexico's government recently added free trade zones to inland port development and created a competitive advantage for distribution and manufacturing centers, but the country still needs more warehousing space. North America's logistics warehousing infrastructure is at least 15 years behind Europe and Asia. Global 3PLs are homogenizing their worldwide warehousing spaces.

Mexico has the potential to develop modern inland ports with FTZ schemes and logistics space, but the country must benchmark with other developments around the world and encourage investment.

SEVILLA-SACASA, Ryder Mexico: Inland ports in the United States and Mexico provide shippers more options and lower costs. Long term, there is potential for increasing trade between Mexico and the United States.

MONTAÑO, Con-way Truckload: Strengthening trade ties benefits the United States because of its proximity to Mexico and the ease of U.S./Mexico business afforded by NAFTA.

The biggest challenge to address involves customs and classifications. Though the United States and Canada classify products similarly, work still needs to be done to ensure secure, efficient cross-border shipping between the United States and Mexico.

Historically, moving freight across the Mexican border has been an inefficient process because of long lines at customs, limited crossing points, and inconsistent regulation enforcement. C-TPAT certification and equipment surveillance have helped ensure the flow of known, low-risk legitimate trade while minimizing contraband.

LaRUE, Port Corpus Christi: Mexico is the United States' third-largest commerce partner, behind China and Canada. With a population of more than 100 million people, the country continues to be a strong potential market for American goods and services.

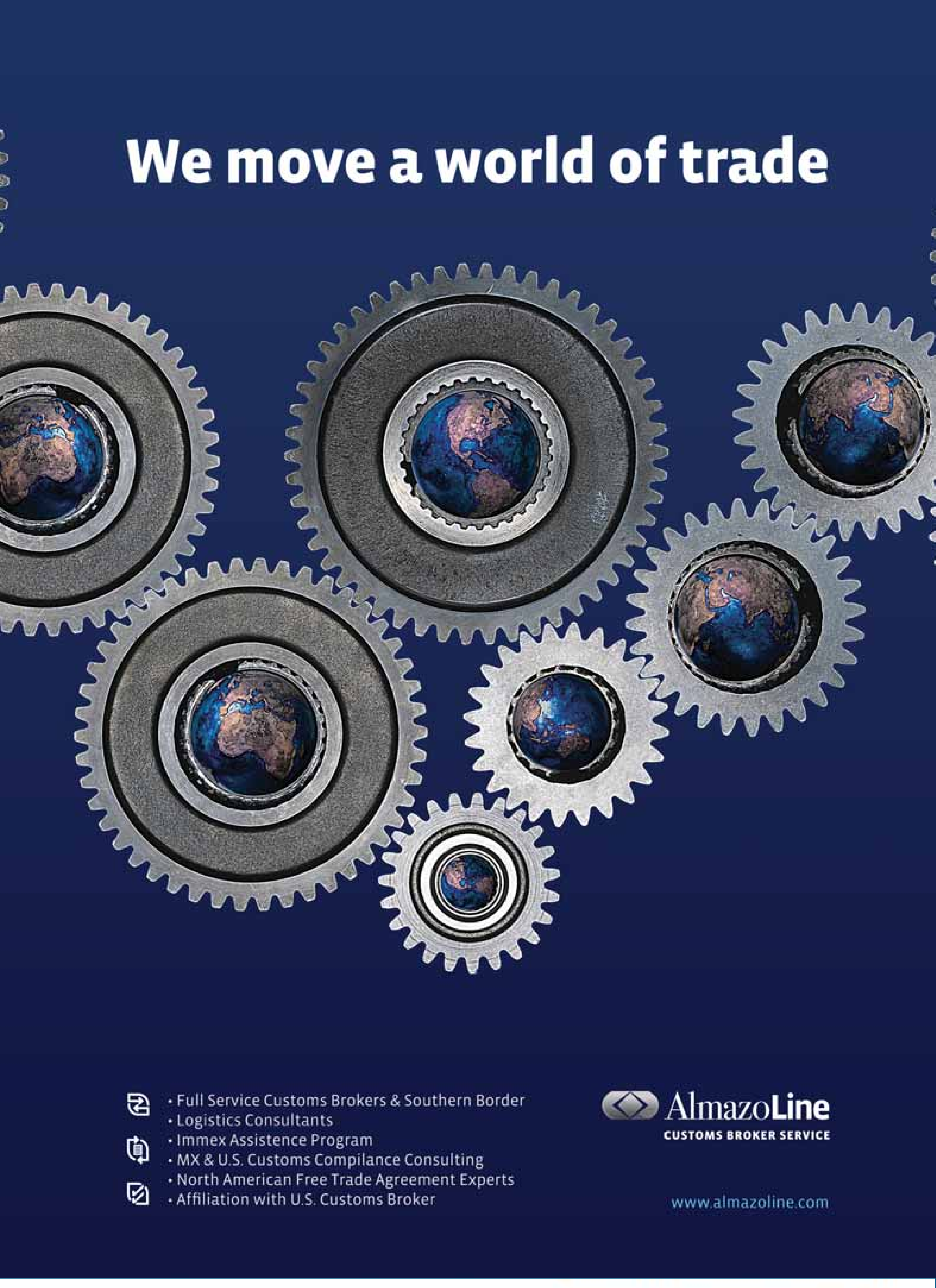
Foreign direct investment, particularly from the United States, should not only apply to the maquiladora industries along the border, but expand into the center and southern regions of the country. NAFTA's goal was not only to open up markets, but also to spur economic and political reforms.

DE LA GALA, DHL Supply Chain: Both countries benefit from trading with each other, but numerous challenges plague their partnership. Mexico has unions protecting their members' jobs, and state and federal governments defending particular sectors. There are also security and customs regulations issues.

IRETA, KCSM: Infrastructure investment is fundamental, particularly under current economic and financial circumstances. Mexico falls below the international average in infrastructure development. The country can strengthen its railway industry through public and private investments that provide public freight service to national and international industries.

To meet the competitiveness of global markets, Mexico needs highly efficient, rail-focused intermodal distribution networks. Rail shipping reduces transportation costs and can help realize energy savings when moving huge freight volumes over great distances.

SEVILLA-SACASA, Ryder Mexico: Mexican exporters should design supply chains that can guarantee their products' entry into other countries, and at greater speed than their global competitors. Not only do customs processes, tax procedures, and border crossings need to be simplified, the infrastructure that helps optimize logistics also needs to be improved. This would allow shippers to select more appropriate transport modes. ■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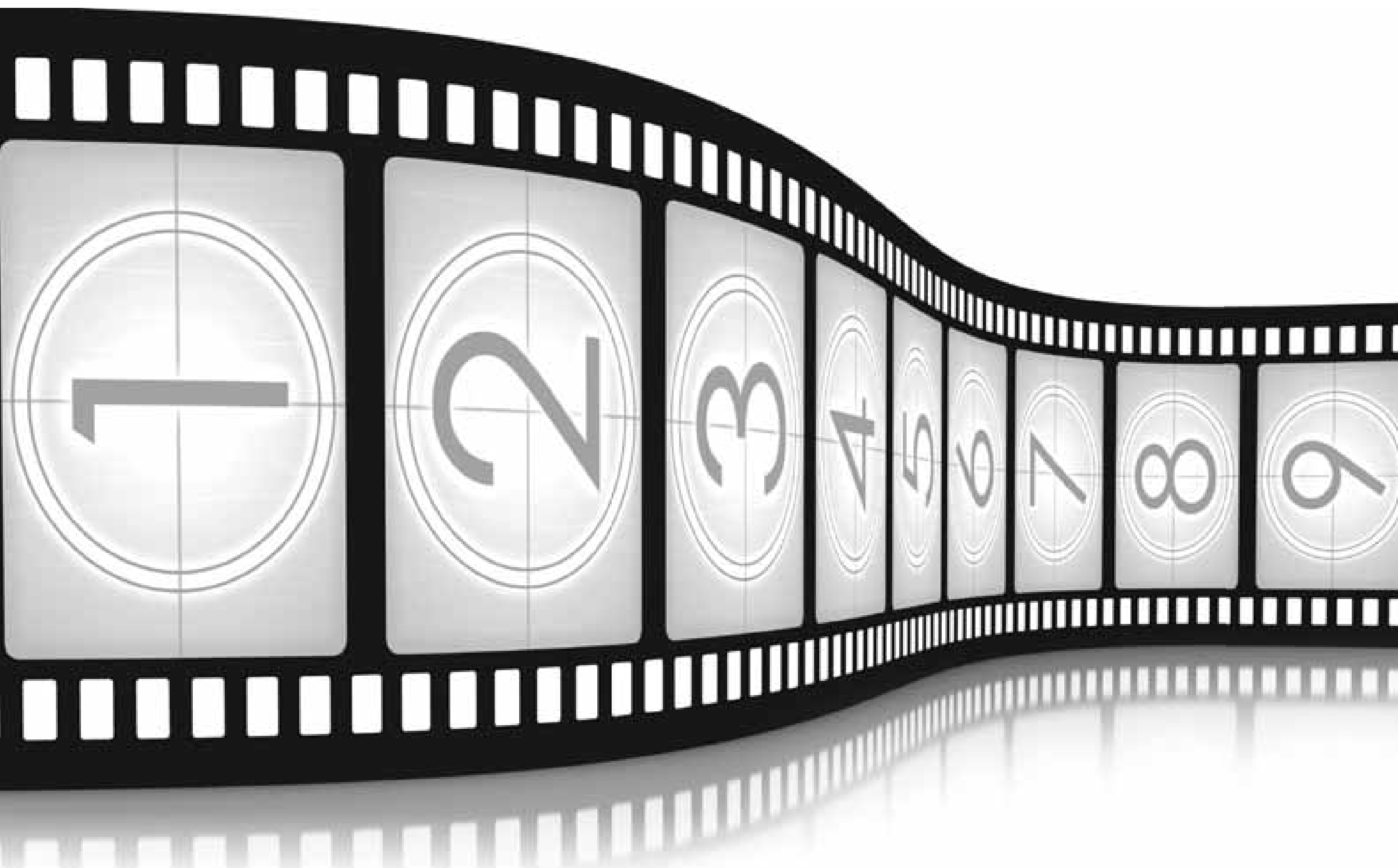
LOGISTICS GOES TO HOLLYWOOD

THE SUPPLY CHAIN'S STARRING ROLE IN POPULAR ENTERTAINMENT



by Dan McCue & Catherine Harden

The global supply chain is as ingrained in Hollywood lore as the phrase "Lights! Camera! Action!" In fact, filmmakers have been relying on logistics to cement their plot lines since before there even was a "Hollywood" in the popular imagination.

Credit Thomas Edison for the first use of logistics on film. His 1898 "feature" *Freight Train* captured 58 seconds of footage of a Southern Pacific Railroad train emerging from a tunnel and rounding a bend.

Since then, shippers, carriers, distribution centers, and ports have been fair game for depiction on screens large and small. Grab some popcorn and watch as we show some highlights of logistics' distinguished career in television and film. Roll 'em…

© Dreamworks Pictures

EAGLE EYE

(2008)

STARRING: DHL Packing Center, Riverside, Calif.

The international War on Terror sets the backdrop for this film, which begins with the U.S. government carrying out a strike on a terrorist leader, but inadvertently killing several innocent civilians instead. A Stanford University dropout, played by Shia LaBeouf, is framed as a terrorist and spends the rest of the movie trying to extricate himself from a plot to kill the president in revenge.

One of *Eagle Eye*'s key action scenes (*left*) takes place at the DHL Packing Center in Riverside, Calif. The scene—a hair-raising variation of the old Chutes and Ladders board game involving LaBeouf, Billy Bob Thornton, and Michelle Monahan—plays out amidst an intertwining system of mail package conveyor belts and envelope shoots, and even a high gantry crane.

ALSO FEATURING DHL:

MISSION IMPOSSIBLE III (2006) **Super spy Ethan Hunt (Tom Cruise) poses as a DHL driver to traverse Rome incognito (*below*). A bright yellow van might not be the most obvious choice for blending in, but the carrier's ubiquity on European roads makes it work.**

© Paramount Pictures

CAST AWAY

(2000)

STARRING: FedEx

This modern-day Robinson Crusoe saga of a FedEx employee stranded on an uninhabited island (*right*) netted Tom Hanks an Academy Award nomination for Best Actor.

Chuck Noland (Hanks) is called away on an unexpected business trip during Christmas. While flying through a thunderstorm, the FedEx jet he's in decompresses and crashes in the South Pacific.

Saved by an inflatable life raft, Noland floats helplessly on the ocean until he lands on a deserted island. Within days, several FedEx packages wash ashore, and, after a failed attempt to sail from the island on his inflatable raft, Noland begins to open the packages, many of which contain Christmas gifts the castaway is able to use as life-saving tools.

Although FedEx did not pay for its presence in the movie, CEO Fred Smith made a cameo appearance, and Noland's homecoming scene was filmed at the company's Memphis facility.

ALSO FEATURING FEDEX

I, ROBOT (2004) **Who delivers packages in 2035? Why, FedEx robots, of course. THE SANTA CLAUSE** (1994) **Santa Claus may handle his own distribution via that famous sleigh-and-reindeer combo, but it takes a fleet of FedEx trucks (*below*) to deliver the naughty-or-nice list to the interim Jolly Old Elf played by Tim Allen.**

© Walt Disney Pictures

© 20th Century Fox / Dreamworks Pictures

THE SECRET OF MY SUCCESS

© Rastar/Universal

(1987)

STARRING: **Job-saving and career-making distribution decisions**

Brantley Foster (Michael J. Fox) leaves Kansas with dreams of making it big in New York, where he gets his start in the mailroom of Pemrose Corporation.

From the various communications that pass through his hands, Brantley discovers several logistics inefficiencies within the company, such as duplicate requisitions being issued by the purchasing department. "Look at the purchasing department: Two people are doing the same job, and neither of them are doing it right," he complains.

While daydreaming at the desk of a recently fired employee, Brantley answers a phone call from a distribution center manager. Not pausing to ask who he's talking to, the manager yells, "We got a problem in Midwest distribution! We can't get approval for an extra two trucks!" After thinking a moment, Brantley asks, "What does a boxcar cost?"

Encouraged by the DC manager's approval, Brantley continues, "You tell your carriers that they have to service our customers, or we'll find someone who will!" The DC manager responds, "That's what we need – someone to make gutsy decisions around here!"

Brantley then takes on a double life as a mailroom clerk and a middle manager, delivering letters while also making big decisions, such as closing a DC in Toledo as a cost-cutting measure.

DEADWOOD

(TV series, 2004-2006)

STARRING: **An Old West courier service**

Deadwood, S.D., in the 1870s didn't offer much in the way of modern conveniences, but thanks to the express courier service run by Charlie Utter (Dayton Callie), denizens of the frontier mining camp could send and receive letters and parcels through the closest city, Cheyenne, Wyo.

SPARTAN

(2004)

STARRING: **A shipping container**

Tracking the kidnapped daughter (Kristen Bell) of a high-ranking government official, a covert U.S. agent known only as Scott (Val Kilmer) uncovers a Dubai-based white-slavery ring and multiple layers of global intrigue. Arriving in Dubai to follow a lead, Scott locates a shipping container at the airport and accesses a secret compartment within, where an associate has left weapons for him. Hidden in plain sight, Scott uses the container as his hideout during his investigation.

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TOMMY BOY

(1995)

STARRING: A small manufacturer's shipping department, loading dock, and private fleet

When recent college grad Tommy Callahan's father dies suddenly, the family business falls into immediate danger. Thanks to a recent manufacturing facility expansion expected to be the future of Callahan Auto Parts, Tommy (Chris Farley) has to hit his dad's sales route and make enough money to save the company from a big-name competitor looking to buy Callahan and shut down its plant (*left*).

With a handle on the company's inventory carrying charges and shipping guarantees, Tommy convinces customers that he has Callahan under control, but soon a shipping mix-up threatens to destroy the whole operation. Loading dock delays on crucial orders prove to be the result of Tommy's bad-seed stepbrother, Paul (Rob Lowe), meddling with the inventory department's computer system. With the help of his girlfriend, inventory manager Michelle (Julie Warner), Tommy discovers what Paul has been up to and saves the day...and the company.

NEXT DAY AIR

(2009)

STARRING: A fictional expedited shipping service

When a hapless deliveryman (Donald Faison) leaves a package containing illegal drugs at the wrong address, he sets off a chain of events that draws in his partner (Mos Def), two bungling would-be dealers, drug kingpins, and an assortment of other dangerous and dim-witted characters.

© Melee Entertainment / Summit Entertainment

THE WIRE

(TV series, 2002-2008)

STARRING: The Port of Baltimore

The Port of Baltimore and its unions—specifically its stevedore union—were significantly featured on HBO's critically acclaimed crime drama *The Wire*. The plot of the series' second season revolved around the port's declining fortunes, its impact on the city's working-class community, and international smuggling.

© HBO

ON THE PAYROLL

Sometimes it seems everyone on the big screen is a high-powered attorney, miracle-working ER doctor, or glamorous magazine editor. The hard-working freight handlers and purchasing managers may be under-represented, but they get their celluloid moments, too. The following films and television shows featured characters working in logistics and supply chain jobs.

© MGM

LEGALLY BLONDE (2001) **Law student Elle Woods (Reese Witherspoon) is the film's official star, but her best-gal Pauline (Jennifer Coolidge) carries a torch for a UPS deliveryman (Bruce Thomas), who steals a scene at the hair salon where Pauline works (*above*).**

PIRATES OF THE CARIBBEAN (2003) **Before turning to swashbuckling, Jack Sparrow (Johnny Depp) captained ocean freighters laden with shipments for the East India Trading Company.**

WAR OF THE WORLDS (2005) **In this remake of the 1950s classic, Ray Ferrier (Tom Cruise) is a dockworker living in Bayonne, N.J.**

© CBS TV / Sony Pictures

THE KING OF QUEENS (TV series, 1998-2007) **Doug Heffernan (Kevin James, *above*) dons a brown uniform as a driver at UPS-style delivery company International Parcel Service.**

MOVIN' ON (TV series, 1974-1976) **This series featured a pair of long-haul truckers (Claude Akins and Frank Converse) and the various people they met on the road.**

TO BE CONTINUED...?

If we missed your favorite supply chain scene, let us know at *hollywood@inboundlogistics.com*


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Does an **LLP** perform the same service as a **4PL**? Can you run a **just-in-time** operation without being **lean**? When push comes to pull, are **logistics** and **supply chain management** interchangeable? Industry experts explain the source of some common misperceptions regarding supply chain and logistics lexicon.

What's the DIFFERENCE?

By Professors John T. Mentzer (pictured)**,**
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Are SUPPLY CHAIN MANAGEMENT and LOGISTICS the same thing?

The short answer is, no. Logistics is one component of supply chain management.

The fact that supply chain management (SCM) includes logistics functions may be the source of confusion about the terms. Making the terms even harder to define, the scope of SCM differs from one corporation to the next, according to anecdotal evidence.

During a recent professional organization meeting, for example, a senior logistician at a Fortune 500 corporation related that at his company, the bounds of SCM extend upstream from production to key vendors and involve only raw materials and sub-component flows. The supply chain organization in his firm falls under the auspices of the chief operations officer (COO), who had risen through production, and initiatives involving finished goods distribution are largely marginalized.

Conversely, as a major retailer's chief SCM officer commented at a University of Tennessee Supply Chain Management Forum, "SCM only makes sense from the perspective of the final customer backwards." In other words, the retailer's SCM includes everything in the company and its suppliers and customers.

In still other organizations, SCM represents a new name for activities formerly handled by the logistics department, with an exclusive focus on finished goods distribution and little interaction with inbound flow processes or production shop floor issues.

More than 500 published definitions of SCM share the following elements:

- Coordination/collaboration with suppliers and customers.
- Demand and supply side matching.
- A flow perspective that incorporates products, services, information, and finances.

What about logistics, then? At its most basic level, logistics management is concerned with effectively moving and storing products and services to create value through time and place transformation.

Logistics, therefore, involves managing facilities, transportation, inventory, materials, order fulfillment, communications, third-party providers, and information within the firm in a way that contributes to customer value. While originally considered a function with little added value, and primarily focused on cost management, logistics has evolved into a source of competitive advantage.

The modern era of logistics management focuses, to some degree, on all these themes. In essence, logistics involves systematically managing movement and storage activities for effective customer service, total cost efficiency, competitive advantage, and, ultimately, enhanced organizational performance. The domain of logistics management, therefore, consists of the following key elements within the firm:

- Transportation network design and management.
- Warehousing techniques, including location, design, and management.
- Materials handling management.
- System-wide inventory management.
- Order management and fulfillment.
- Procurement.
- Customer service.

2ND OPINION

SUPPLY CHAIN MANAGEMENT: Supply chain management encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities. Importantly, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers. In essence, supply chain management integrates supply and demand management within and across companies. It includes all logistics management activities, as well as manufacturing operations, and it drives coordination of processes and activities with and across marketing, sales, product design, finance, and information technology.

LOGISTICS: Logistics management is that part of supply chain management that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, services, and related information between the point of origin and the point of consumption in order to meet customers' requirements. Logistics management activities typically include inbound and outbound transportation management, fleet management, warehousing, materials handling, order fulfillment, logistics network design, inventory management, supply/demand planning, and management of third-party logistics services providers. To varying degrees, the logistics function also includes sourcing and procurement, production planning and scheduling, packaging and assembly, and customer service. It is involved in all levels of planning and execution - strategic, operational, and tactical. Logistics management is an integrating function that coordinates and optimizes all logistics activities with other functions, including marketing, sales, manufacturing, finance, and information technology.

—Council of Supply Chain Management Professionals (CSCMP)

This does not mean that logistics does not manage these functions with other firms; it means it manages these third-party logistics relationships with an eye toward benefiting the logistics manager's firm.

A DISTINCT DIFFERENCE

Understanding the differences–and similarities–between a functional-level activity such as logistics and the cross-functional and cross-disciplinary concept of SCM can benefit companies. Such a distinction can help clarify the decision-making scope required for change initiatives, for example.

Many functional managers are frustrated by assignments that require them to secure significant cross-functional buy-in and participation, but do not give them the authority to guarantee it. Inventory improvement initiatives are often sub-optimized because achieving them while maintaining or improving customer service requires the participation not only of warehousing and transportation, but also procurement, sales, marketing, production, accounting, and finance.

This distinction between logistics and SCM can also help map out the skill sets necessary for managers in each area, both at the entry level and as careers progress, and suggest potential changes to organizational structure.

One high-level operations executive for a Fortune 500 firm suggests a new organizational structure that recognizes functional-level operations managers (director of logistics); firm-level operations managers (COO); and a new cross-organization level operations manager called a chief supply chain management officer who has broad responsibility for the processes that cross the firm and extend to goods and service suppliers, as well as customers.

IL Readers Weigh In...

Are SCM and logistics the same thing?	YES	NO
	6%	94%

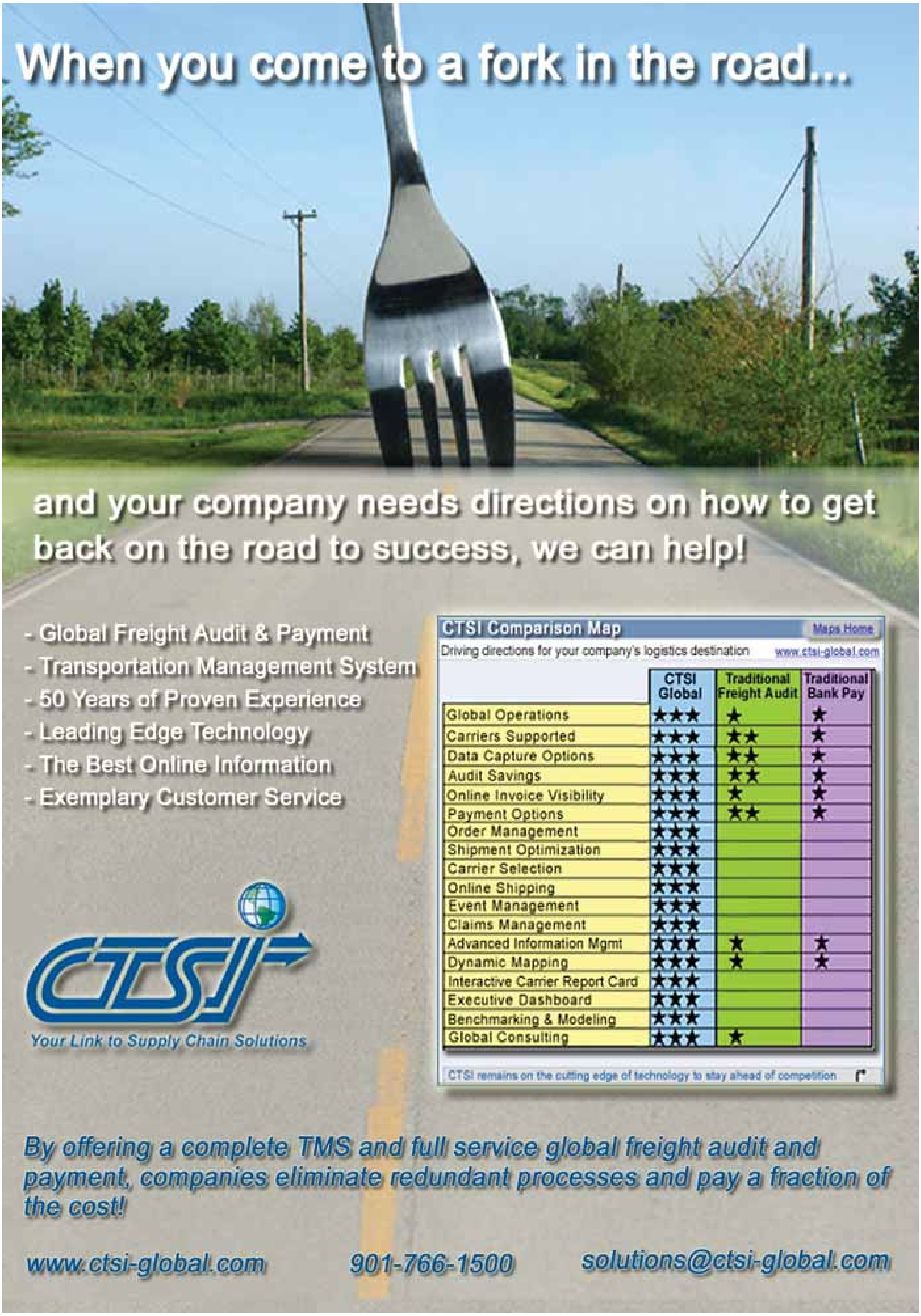
"Logistics is the overall practice, and SCM is one specialized component of that practice."

"SCM is a business philosophy, while logistics refers to the activities that facilitate the flow of goods through the supply chain."

"Logistics focuses on movement, whereas SCM encompasses much more, including production, manufacturing, transportation, and supplies."

"Logistics is about physical flow, while supply chain involves data flow as well."

"Logistics is the study of the physical movement and storage of products, while SCM is a higher-level study. SCM incorporates sales planning, sourcing (inbound logistics), production, distribution (outbound logistics), and returns. In short, logistics is a sub-set of SCM."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Is a LEAN Operation Different from JUST-IN-TIME?

Just-in-time operations are always lean–but lean operations do not necessarily perform just-in-time.

Just-in-time (JIT) operating practices have been around a lot longer than the new kid on the block, lean operations. The JIT philosophy is usually credited to the manufacturing practices Henry Ford introduced at his Dearborn, Mich., River Rouge complex, where iron ore delivered on Monday morning rolled off the assembly line as part of a finished automobile three days later. Ford recognized that his plant would be overwhelmed with materials in various stages of production if he did not keep them tightly scheduled and rapidly moving to final assembly. He allowed no wasted time, which, in turn, meant no delays.

Delays directly translated to wasting resources–creating inventory and the subsequent need for storage space, additional handling, and scheduling. To avoid delay, policies such as, "You can have any color you want, as long as it's black" kept production lines moving and minimized administrative expense.

As management's understanding of JIT grew, it came to include fast customer service response and anticipating demand. Think quick response – the delivery of electricity when a switch is flicked, or when a fire department responds. These businesses expend many resources to obtain quick response. There is nothing lean about what goes on here.

Decades after River Rouge, principally as a result of the quality control and assurance theories and practices advocated by Dr. Joseph M. Juran, then implemented throughout Japan with guidance from Dr. W. Edwards Deming, the quality improvement derivative known as Kaizen–or the continuous improvement process–quickly took hold.

The initial objective of this movement was to improve terrible manufacturing quality and the associated waste. The ultimate objective was to reduce waste anywhere and everywhere in business processes, and the term "lean manufacturing" gained traction. Today, lean is synonymous with waste reduction.

Perhaps one cause for confusion between JIT and lean manufacturing is that both

2ND OPINION

JUST-IN-TIME: An inventory system that controls material flow into assembly and manufacturing plants by coordinating demand and supply to the point where desired materials arrive just in time for use. Developed by the auto industry, it refers to shipping goods in smaller, more frequent lots.

—Kate Vitasek, Supply Chain Visions

LEAN: The conduct of manufacturing operations with a minimum of the seven categories of waste identified by Toyota Production System founder Taiichi Ohno: over-production; waiting time; transportation; processing time itself; movement; the production of non-conforming product; and the maintenance of stock.

—Warehousing Education and Research Council

practices reduce waste. In the case of JIT, the focus is on eliminating time delays. Properly conceived, reducing response time is calculated to be of greater value than other required resources.

In lean operations, the focus is on eliminating or driving down cost. Any and all eliminated costs make an operation more lean. Because even the cost of time may be considered, the meanings of JIT and lean are likely to be misunderstood.

Successful logistics operations are both JIT and lean. It can be no other way. Even if they are not performing JIT, many organizations are challenged to spend intelligently to clean up unseen inbound and outbound operating tiers, communications, and reporting thought to be lean but, in fact, are quality and performance risks.

It is important for those in the business of providing high-quality product, information, or other services to understand how to develop a system that delivers high performance to customers. In the end, buzzwords don't count, but we must be absolutely sure we know what we seek. Future inbound and outbound logistics operations in successful organizations will be defined not only by being lean while providing JIT service, but by simultaneously achieving quality and performance through all the unseen tiers of the supply system.

IL Readers Weigh In…

	YES	NO
Is a lean operation different from just-in-time?	100%	0%

"Lean emphasizes cutting out non-value-added activities. JIT concerns time postponement – the non-value-added activity of holding inventory before it is needed."

"Lean is zero waste and a minimal resource requirement approach to managing costs within a supply chain. JIT is one of many techniques that lead to a lean supply chain."

"Lean is about eliminating waste. JIT can be about eliminating waste, but it can also push raw materials and in-progress inventories off to a third party."

"Lean is about improving processes; JIT is about minimizing inventory for the customer."

"Lean deals with the overall cost-of-time process review, while JIT deals with getting material at point of consumption on time."

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Is There a Difference Between an LLP and a 4PL?

The distinction between a lead logistics provider (LLP) and a fourth-party logistics (4PL) provider depends on how an individual or service provider defines its offerings.

True LLPs are rare in today's outsourced logistics environment. In theory, an LLP coordinates logistics functionality in accord with the client's business plan. This requires that the LLP become part of the client's management team from a strategic perspective, with involvement in everything that follows sales forecasting – from vendor selection, through production planning and, ultimately, the client's customer interface. Naturally, the LLP oversees all associated tactical logistics functions, including collaborating with the client to select and negotiate with specialized service providers.

The LLP should also provide the technology interface, which gives a single point of reference for the various service providers' interrelated activities. This windshield view of all supply chain activity affords the ability to react early to any deviations from the plan or changes that occur in the client's business environment.

Effectively, the LLP would be the constable on patrol, not only monitoring its own and other service providers' activities, costs, and performance, but also identifying opportunities to revise the logistics operating system in order to enhance service and contain transportation, production, and inventory carrying costs. In reality, most companies don't receive this level of service from an LLP because of the inherent conflict of interest. Many LLPs tend to assume every revenue opportunity possible.

Think of buying LLP services in terms of planning a catered dinner. Ideally, an LLP helps you determine the menu and choose a caterer to prepare the food, arranges for the appropriate wait-staff and serving equipment, and provides only the menu items that fall into its specialty area. It ensures that all suppliers have provided the appropriate quantity and quality on time, and coordinates with those suppliers to fulfill the presentation specifications. The LLP then presents you with an all-inclusive bill.

In reality, working with an LLP is more like planning a dinner with a caterer that specializes in pasta dishes. If you select a menu of Chateaubriand, a pasta side dish, and French pastries for dessert, the LLP not only prepares the pasta, but also hauls out a French cookbook

2ND OPINION

LEAD LOGISTICS PARTNER (LLP): An organization that coordinates other third-party logistics partners for outsourcing of logistics functions. An LLP serves as the client's primary supply chain management provider, defining processes and managing the provision and integration of logistics services through its own organization and those of its subcontractors.

—Kate Vitasek, Supply Chain Visions

FOURTH-PARTY LOGISTICS PROVIDER (4PL): A supply chain integrator that assembles and manages the resources, capabilities, and technology of its own organization with those of complementary service providers to deliver a comprehensive supply chain solution.

—Accenture


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and tackles the entree and dessert, rather than contracting for the dishes that fall outside its specialty area. You receive separate bills from the caterer, the wait staff, and the equipment rental service.

THE 4PL FOCUS

The successful 4PL is a non-asset-based outsourcing provider possessing sophisticated SCM technologies that can easily link to both a client's and other service providers' systems. It tends to focus on its own area of expertise, such as domestic or international transportation and/or warehousing. The firm often maintains formal or informal partnerships with other organizations, with minimal competitive overlap. The more formal those working relationships, the greater the development of a fluid working collaboration.

In a true 4PL relationship, the 4PL is the single point of interaction with the client. This includes providing the technology interface, communications, and customer service, as well as a single bill for all services. If a partner service provider does not perform to service or cost terms agreed to with the client, the 4PL rectifies those issues or changes the service partner.

A 4PL provides you with an all-inclusive dining experience, but serves a limited menu and only pours the house wine.

IL Readers Weigh In…

Is there a difference between an LLP and a 4PL?	YES	NO
	47%	53%

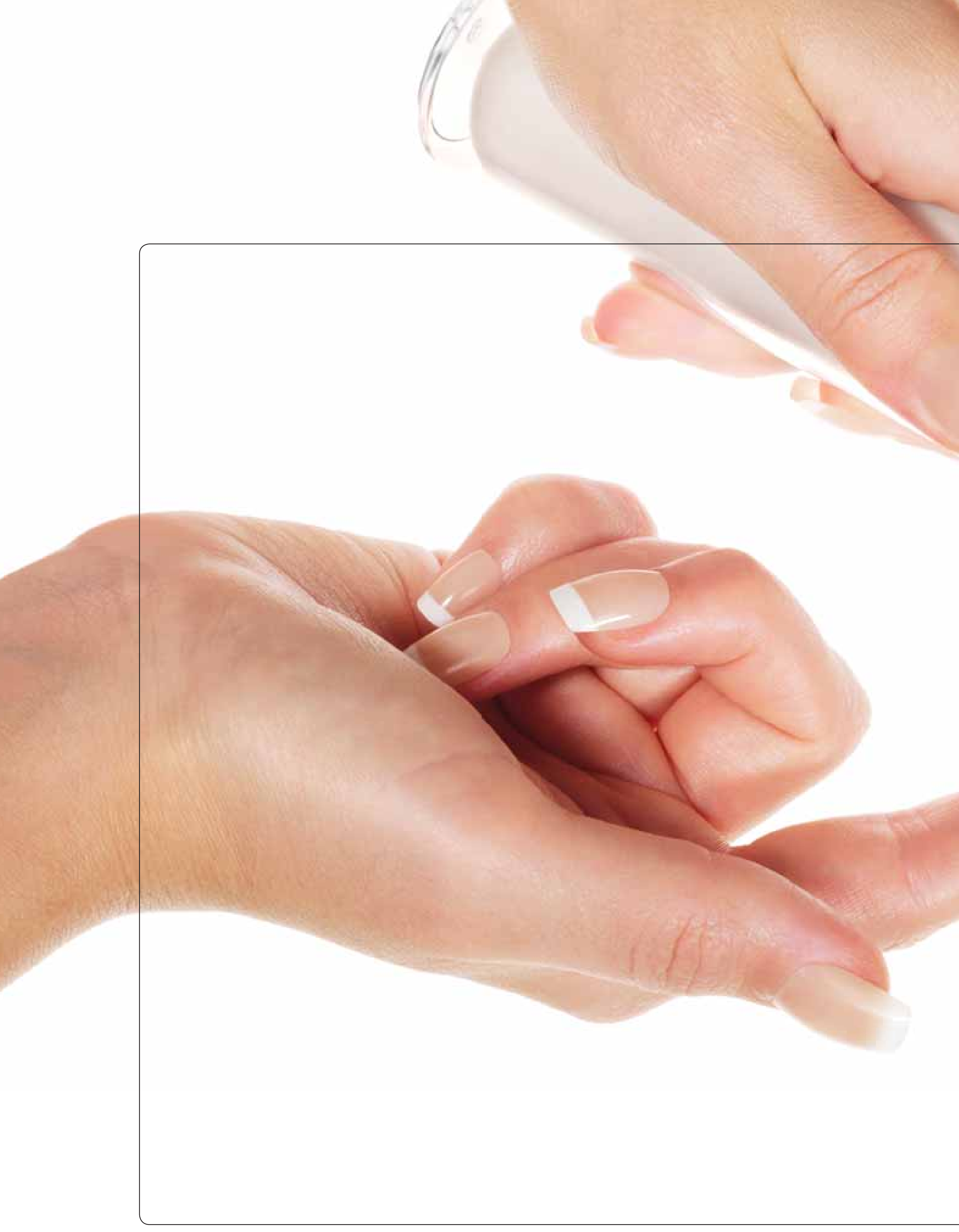
"It's the same idea, just different jargon for an entity that manages the process."

"An LLP is the next level after a 4PL. In addition to 4PL activities, an LLP also provides technology support and consulting input. This is because, by virtue of deep visibility into the customer's supply chain, an LLP is positioned to suggest path-breaking improvements. Compared to an LLP, a 4PL is more transaction-oriented."

"Whatever you call it, it is an outsource manager of a logistics network that includes managing other 3PLs."

"There's no difference. They both are 'outsourcing' the outsource process."

"One is a management company, the other actually adds value."



[SNAPSHOT] COSMETICS AND SKIN CARE

[OVERVIEW] The Personal Touch

Cosmetics and skin care manufacturers look in the corporate mirror and smooth logistics and supply chain wrinkles. BY JOSEPH O'REILLY

"The beauty business is market driven, so marketing drives our company," says Ralph Folkes, assistant vice president of corporate transportation, L'Oreal USA, based in New York City.

Consumer appeal ultimately lies in the eye of the beholder. But when discretionary shoppers can't find L'Oreal's Colour Riche lipstick in Brazil Nut, or Vive Pro daily thickening shampoo for men, all eyes focus on the supply chain.

As the U.S. arm of the largest cosmetic products manufacturer in the world, L'Oreal straddles the balance between creating a demand and meeting it. Beauty-care consumers have specific wants, and manufacturers and retailers are obliged to ensure the desired products are on the shelf. Brand recognition turns heads, but efficient supply chain management seals the deal.

For Burt's Bees, a niche, all-natural skin care products producer, the company's ethos and product appeal depend on equal acceptance from the consumer.

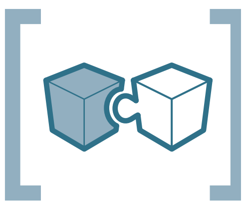
"Sustainability flows into our product, corporate culture, and customers," says Paul Tartalio, senior vice president of product supply chain organization for Durham, N.C.-based Burt's Bees. Achieving this goal requires publicizing the merits of sustainable sourcing, educating consumers on the value of all-natural ingredients, and having inventory in place to lure shoppers into buying.

For both L'Oreal and Burt's Bees, and the health and beauty care industry at large, marketing and logistics play an uneasy game of give and take. Shelf presence and off-the-

shelf transportation management solutions are hot commodities. Manufacturers and retailers together rely on demand sensitivity to keep pace with the latest sensitive skin care lotion to hit the market. But unique unit packaging collides with uniform loads; and capturing both the consumer's eye and point-of-sale signals compete for undivided attention.

Inside the carton, out on the truck, or above in the corporate ether of sustainable stewardship, these demand- and supply-side functions have a stake–each with its own pull. Much like the consumers who buy into their sell, personal care product manufacturers are taking a reflexive look in the mirror–then applying logistics and supply chain management salves to manage the fickle tendencies of American beauty.

[HOT TOPICS] Beyond Cosmetic Concerns

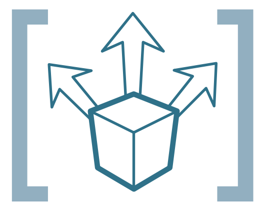


Integrating Marketing and Supply Chain One unique aspect of the health and beauty products industry is the synergy that exists between supply chain and marketing. Who knows the consumer better: the manufacturing and logistics function that has worked with research and development to understand, execute, and deliver to demand or the marketeers spinning the publicity machine?

Friction between marketing and physical flow can present a challenge. On one side, shelf presence and packaging are at a premium, encouraging individuality and different product shapes and sizes. On the supply side, carton, pallet, and cube standardization is a priority.

Properly communicating marketing and sales efforts to back-end logistics functions, and vice versa, is important. Real-time data and key performance indicators need to flow from point of sale so that production and logistics can ramp up or scale down inventory according to demand. Marketing and sales can similarly leverage inventory information to discount and liquidate under-performing SKUs and reduce carrying costs for obsolete product.

No matter how you dress forecasting, it's still a guessing game. Measuring consumer behavior helps predict demand, but product placement and availability also engage the customer's senses and trigger spot consumption. Maintaining open avenues of communication between internal departments helps increase flexibility and responsiveness.



Managing Multi-Channel Fulfillment Health and beauty care products are sold into a variety of different retail streams, each with its own wrinkles.

L'Oreal, for example, targets four markets: consumer products to mass retailers and chain drug stores; luxury brands to department stores and boutiques; beauty supplies to salons and professional product groups; and active cosmetics or dermatological products through dermatologists. Burt's Bees sells to mass merchandisers and department stores, smaller specialty stores, and to consumers directly via the Web.

Success is contingent on understanding the end

customer's tastes, as well as working within the retail customer's boundaries. Chain drug stores with a specific shelf presence may fold a manufacturer's brand into their own store line. For example, Burt's Bees' new oral care product is displayed with toothpaste and other like products. But in a specialty store, its product line may be featured in its distinctive "hive" display cases. Conversely, selling to online customers demands entirely different marketing tools and packaging requirements.

These variables translate to transportation as well. Big box wholesalers often want regular LTL and truckload deliveries, while boutiques, salons, and direct-to-home buyers may order in smaller batches or rely on parcel and expedited shipments.

Depending on the size and scope of business, manufacturers can operate separate supply chains for each business unit or source from a centralized pipeline. Finding synergies among disparate channels can help consolidate inventory, rationalize transportation, and reduce costs.

[CASE STUDY] Personal and Planetary Care: It's the Bees Knees

Burt's Bees' business is all about creating a buzz. As sensitivity to product quality and safety continues to grow, the Durham, N.C., all-natural personal care goods manufacturer has found a lucrative consumer niche that is growing fast.

Two years ago, the company, famous for its lip balm and skin care products, found itself in dire need of more space. Its Durham facility served as an administrative office, manufacturing plant, and distribution center. But with annual growth topping 25 percent, Burt's Bees needed a new facility to consolidate inventory and manage distribution.

So it turned to Raleigh, N.C.-based supply chain consultant Tompkins Associates to help lead its site selection search and DC design.

"Tompkins took into consideration what we were and what we are going to be, and applied that to the design," says Paul Tartalio, senior vice president of product supply chain organization, Burt's Bees.

Together, Tompkins and Burt's Bees considered outsourcing the new distribution center to a third party, but instead opted to acquire a 144,000-square-foot facility so that the manufacturer could accommodate future expansion and maintain control over the operation.

Because Burt's Bees' products and culture are defined by what Tartalio describes as "personal and planetary care," he had misgivings about whether the company could find a third-party logistics service provider capable of matching or learning those values within the anticipated roll-out window.

"We source and produce our products from all-natural raw materials," he explains. "Our challenge is that we are very different from the market. Sustainability is part of our DNA, our culture, and our product."

This vision permeates the company's supply chain from source to shelf and in-between.

Inside its new DC, Burt's Bees wanted to bring a similar sustainable approach. Tompkins Associates retrofitted the facility with energy utilization in mind. It painted the facility all white to increase reflectivity and

Less Packaging, More Gain Packaging essentially serves two purposes: it protects products while they transit the supply chain, and it serves as a marketing vehicle, conveying important information to the consumer. The challenge for health and beauty care companies is minimizing packaging, wraps, and labels without diluting the individuality or marketing appeal of a specific unit.

Efforts to revolutionize packaging with innovative, earth-friendly materials have become commonplace. For Burt's Bees, selling sustainable packaging is as much a part of its corporate culture as peddling its many SKUs of all-natural skin care goods.

Personal care product manufacturers have become familiar with using post-consumer and post-industrial recyclable materials, reducing wraps and excess packaging to shrink their

installed new lights to similarly capture greater energy savings. Tompkins also engineered a motorized drive roller conveyor that only runs when activated by sensors.

"In keeping with Burt's Bees' culture, we selected a 24-volt conveyor system, managed by our Tompkins Warehouse Control System, to minimize power use. The conveyor shuts off zones when there is no product online," says Dale Harmelink, a Tompkins Associates partner.

The decision to compartmentalize its distribution operation, move it to a larger facility, keep operations and control in-house, and leverage new technology has helped Burt's Bees manage the growth of its business without diluting its cultural mission. In fact, it has gotten better.

The company's square footage has expanded 140 percent, but its energy usage has been cut in half. Now that Burt's Bees has greater control over inventory flow, it is focusing efforts on growing business the only way it knows–creating more buzz.

material footprint. Burt's Bees and L'Oreal are both engineering packaging solutions that are biodegradable, specifying materials with after-life reconciliation and recycling in mind.

Beyond consumer demand for more eco-friendly packaging and the marketability this carries, reducing product footprint practically eliminates cost. Lighter weights and smaller sizes translate to better cube utilization and transportation economy.

Taking Stock of SKU Proliferation Product diversity is a necessary evil because consumers like having choices when they open their medicine cabinets. Marketability expands with consumer taste, so mass appeal triggers mass production and massive headaches for supply chain practitioners.

But providing consumers with a multiplicity of lipstick, mascara, hair care treatments, and countless other products to choose from–in different colors, styles, and sizes–is important. For appearance's sake, retailers often need to stock and display a full product line, with all its variations, regardless of what is selling. Conversely, the more products and types there are, the greater the competition for shelf space.

Greater product complexity clutters the supply pipeline, creates less uniformity, builds

more inventory, and impacts load efficiency and freight costs. It also introduces new and different packaging requirements into the mix.

Companies can do a better job of minimizing SKU creep by forecasting demand more accurately and eliminating less-popular or underachieving units. The economic downturn drove many manufacturers to consolidate their brands and focus on what is selling, jettisoning under-performing product. To some degree, consumers were more attracted to economy than selectivity.

Regardless, companies need to engage their retailers better and understand point-of-sale trends, then communicate this data to marketing and logistics to marry inventory with demand.

Measuring Quality and Sustainability Brand and integrity go hand in hand, and personal care product manufacturers are especially attuned to monitoring the quality of their products from source to shelf. The wave of tainted consumer product imports from China in 2007 put manufacturers and retailers on red alert as the ramifications of bad publicity became painfully apparent

[BEST PRACTICES]

Prescriptive Solutions: Anything but Cosmetic

Reacting to variable demand and marrying marketing and logistics efforts requires a great deal of collaboration. Personal care product manufacturers can choose from a wealth of resources and strategies, but these four tools of the trade are especially important.

1 **VENDOR-MANAGED INVENTORY (VMI)**—Employing a VMI strategy can help businesses reduce the risk of carrying too much inventory and respond better to shifts in demand patterns. For example, a manufacturing facility running 100,000 SKUs four months out carries a considerable amount of stock that may or may not sell.

Charging suppliers with inventory management leans the pipeline and leaves product in its least value-added form farther back in the supply chain. Companies can leverage this flexibility to rationalize packaging requirements for different retail channels closer to demand or even source all inventory from a centralized stock point.

2 **INBOUND LOGISTICS**—In the personal care product supply chain, demand sense and respond is a competitive differentiator. Controlling inbound transportation and product flow at each pivot in the supply chain – from manufacturing plants to distribution facilities to retail stores – helps businesses pull inventory to demand.

Capturing demand signals from the point of sale, then sharing this information with marketing, logistics, and service providers upstream in the supply chain, enhances visibility, grows collaboration, and increases flexibility and economy.

3 **FREIGHT CONSOLIDATION**—SKU variability and differing carton sizes, multi-channel business requirements, and varying transportation demands make freight consolidation a must for cosmetics companies. From locating inventory in centralized DCs to controlling inbound transportation and pooling shipments, manufacturers can improve asset utilization and freight spend.

4 **PACKAGING**—Packaging is a hot topic and an executable solution for the health and beauty industry. It's a means of conveying information and appeal to a consumer, and reducing material footprint has an impact on load optimization and transportation needs. Marketing and logistics each have a hand in engineering packaging requirements, which can increase communication and collaboration in countless other ways.

SNAPSHOT
COSMETICS AND SKIN CARE

to a select few.

Now that a "green" wave has swept over industry with resounding acceptance, consumer-facing companies are not only watching their raw material sources and finished goods more carefully, they're watching what they use to produce and package product.

Burt's Bees' value proposition is built around sustainable sourcing, and its supply chain carries the same message. Because its products are obtained from all-natural raw materials, speed to production and market is critical. Time sensitivity is at a premium and so is quality control. Shorter shelf-life constraints require continuous and extensive testing of raw material sources and finished goods. ■

[CASE STUDY] Inbound Routing Compliance: L'Oreal-ity Check

When a lake is filled to the brim it looks pristine, calm even. But when the water level drops, rocks and other hidden anomalies begin to surface.

This is how Ralph Folkes, assistant vice president of corporate transportation, L'Oreal USA, describes the decision to invest in a new transportation management system (TMS) in 2008, as a receding economy began to expose submerged rocks within L'Oreal's supply chain.

The U.S. division of the world's most recognizable cosmetics brand was challenged with holding vendors compliant to inbound transportation requirements. After much due diligence, L'Oreal USA chose Elmwood Park, N.J.-based UltraShipTMS' flagship solution, *UltraShipTMS*, to help automate its routing guide and attain greater visibility.

Folkes, who was formerly transportation head of the manufacturer's consumer products division, also recognized that business units within the company needed to work closer together and to pool purchasing leverage volume to create cost savings and service improvements.

L'Oreal had a TMS in place to oversee outbound transport from distribution facilities to customers. But it needed to gain greater control over inbound raw material flow to its manufacturers. Vendors were specifying their own carriers, not L'Oreal's preferred carriers. So the company decided to revamp the process by beginning at the top.

"This approach was critical to improving the flow of components and raw materials into our manufacturing facilities," explains Folkes. "By controlling this part of the supply chain, we could dictate transportation and inventory management, expand visibility, and plan ahead more accurately."

Using *UltraShipTMS*, L'Oreal triggered a transformation that comprised three phases:

1. COMPLIANCE. "We needed to convey appropriate transportation instructions to our suppliers," says Folkes. "The cost savings from simply holding vendors and suppliers more accountable have been significant."

2. MODE SELECTION. "Shipments weighing 20,000 pounds should move truckload, not LTL," Folkes says. "The system, not the supplier, now dictates mode."

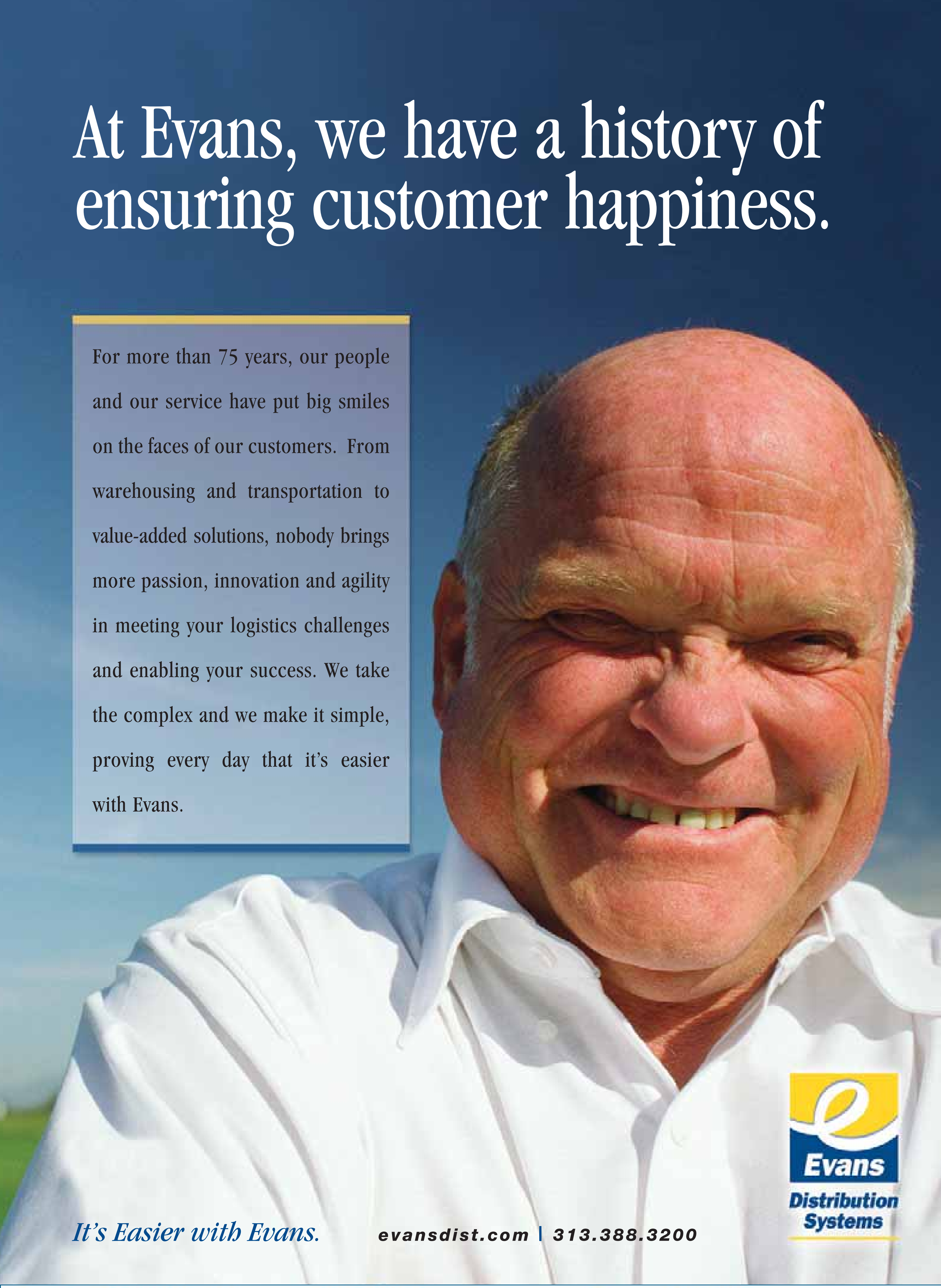
3. OPTIMIZATION. "We have now given our manufacturers the tools to go back to suppliers and figure out how to ship to us more efficiently. We cleansed the supply chain by delivering more accurate lead times. This allows our suppliers to pool shipments, and we have freight ready to build full truckloads," Folkes explains.

Given the way the market was moving, L'Oreal's TMS rollout was timely, but also necessary. "We had no low-hanging fruit," says Folkes. "The fruit was already on the ground."

The objective for companies is to leverage the TMS and make it a supply chain tool, "to integrate it with any warehouse or transportation management system in place, and connect the links in the chain," explains Nick Carretta, president of UltraShipTMS.

The manufacturer has been able to increase inter-plant transportation efficiency between manufacturing locations and distribution centers, but it still uses separate transportation management systems to manage inbound and outbound. Moving forward, it will migrate toward a system that incorporates both. This way it can use inbound freight data to optimize outbound movements.

"Once a complete TMS is in place, collaboration with carriers and customers is boundless," says Carretta.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THE CARGO THEFT THREAT

A thriving black market keeps cargo thieves in business—to the detriment of the global economy.

by Jared S. Palmer

Cargo theft has been around for centuries, from robbers attacking merchants on trading roads to pirates seizing ships at sea to bandits on horseback robbing stagecoaches. Unfortunately, crime has evolved along with cargo transportation methods. Trucks have replaced horse-drawn carriages, and today's bandits are organized into international crime syndicates.

THE CARGO THEFT THREAT

Cargo theft is an international problem affecting consumers and businesses alike. In today's global economy, raw materials manufacturing and sourcing often occurs in one part of the world, while the finished product is warehoused and consumed in another. Cargo can be stolen at any point in between, compromising product integrity and availability.

The global economic crisis has increased worldwide demand for black market goods. In the United States, where an estimated $30 billion in cargo is stolen annually, cargo thieves are sophisticated, organized, and, generally, not home-grown. Thieves are often recruited from the United States and trained by Cuban crime syndicates, then sent to Florida to establish their operations.

Most of the stolen cargo in the United States is brought to ports and exported in ocean containers to countries such as Paraguay, Venezuela, Colombia, Brazil, Argentina, the Dominican Republic, and Costa Rica. From there, it is sold through black market distribution channels.

Chain Gangs

In addition to inflicting financial damage on shippers, carriers, manufacturers, and consumers, cargo theft has even more alarming repercussions. In California, violent gangs such as MS-13 (also known as Mara Salvatrucha; its leaders are from El Salvador), have been known to finance their activities through cargo theft, and in Canada, the Chinese Triad crime organization has been linked to several reported cargo thefts. Mexico is in the middle of a serious drug war, and violence is all too commonly associated with cargo theft by these warring drug cartels.

Finally, concerns have been raised that the money generated by various

Preventing Cargo Theft

Companies can take a number of actions to improve facility and vehicle security. From implementing security devices and technologies to creating common-sense security practices, the following tips from Bill Anderson, group director, global security, for Ryder Systems Inc., can help prevent and mitigate losses associated with cargo theft.

1. **Go high-tech.**
GPS tracking tools can help determine a stolen vehicle's location, and geofencing solutions send a security alarm if a vehicle travels outside a prescribed route or enters high-risk areas. Vehicle immobilization technology can be used to remotely disable a stolen vehicle and aid in its recovery.

2. **Go low-tech, too.**
Apply a variety of locks to secure the vehicle and cargo, such as king pin locks that prevent the tractor and trailer from being separated, air brake valve locks that prevent brake release, and glad hand locks that lock the trailer's air line. Seals also limit intrusion and create an alert that doors have been tampered with.

3. **Stay alert.**
Watch for signs that your facility's operation is under surveillance, such as vehicles parked outside or within view of the facility; individuals holding cameras or taking notes outside your facility; unauthorized personnel inside the facility or walking the perimeter; or vehicles (usually minivans or SUVs, especially those with two or more occupants) that appear to be following your drivers.

4. **Respond.**
Because criminals can move stolen goods quickly, immediately report all suspicious activity and/or theft to management and law enforcement officials. Respond to every alarm. Frequent "false alarms"—including attempted facility entries or break-ins—may be a sign that suspicious individuals are testing the facility's security system and law enforcement response times.

5. **Know your supply chain.**
Know the carrier and driver scheduled to pick up your cargo and verify their identity before you release the load. Monitor delivery schedules and routes, and be suspicious of overdue shipments or out-of-route journeys. Review your supply chain partners' security procedures and know where your cargo will stop along its route.

6. **Execute basic safety practices.**
Keep trucks locked and park them in an organized manner on a well-lit facility lot. Ensure alarm systems are functioning properly, and are monitored by a central station that has updated contact information. Communicate to driver teams that one person must remain with the vehicle at all times. Review security at your site regularly and quickly address maintenance and repair issues.

7. **Screen and train employees.**
Cargo theft is often perpetrated with inside help. Rigorous pre-employment screening will help weed out those most likely to steal merchandise from a warehouse, loading dock, or truck.

THE CARGO THEFT THREAT

U.S. organized cargo theft rings is being funneled back to terrorist organizations such as Al Qaeda and Hezbollah to fund future attacks against American interests.

Understanding the way cargo thieves plan and accomplish their attacks can help shippers protect themselves against such crimes. (*For tips on preventing cargo theft, see sidebar, page 240*). Methods vary in sophistication and execution, but here are some common strategies criminals use to attack truck shipments.

■ Cargo thieves target goods they can easily broker through a "fence," or a person who knowingly buys

Task Force Seeks Solutions

Trucking companies, insurance providers, and law enforcement agencies have joined together as the National Cargo Theft Task Force (NCTTF) with a goal of reducing cargo theft in the United States and finding solutions for this growing problem.

One of the organization's goals is to improve the accuracy of cargo theft statistics by raising awareness among transportation professionals, insurance providers, law enforcement agencies, and government. To accurately measure the scope of the problem, cargo theft must be consistently reported and tracked.

The NCTTF also seeks methods for storing and mining this data while protecting the privacy of the victims. With this data, NCTTF can make its case to legislators for more funding and tougher laws to fight cargo theft.

For more information about the NCTTF, go to www.nationalcargotheft-taskforce.org.

Criminal Records: The Cost of U.S. Cargo Theft

Average value
(per stolen load)

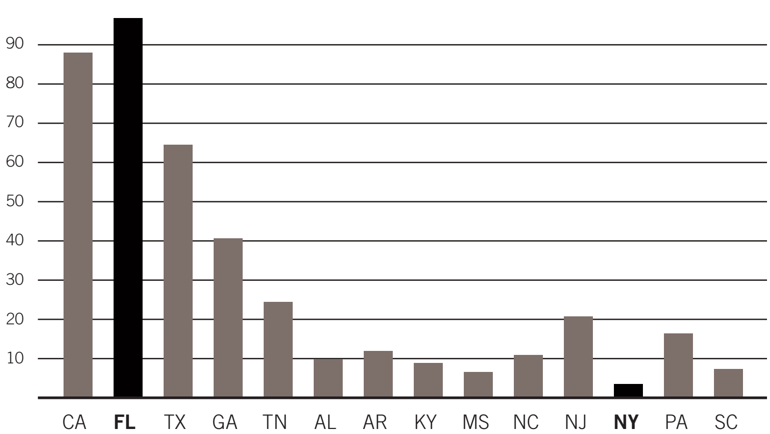
2008	2009
$1,152,556	$2,121,638

Reported Theft (2008 vs. 2009)

	ELECTRONICS		ALCOHOL		PHARMACEUTICALS		APPAREL		FOOD/DRINK	
	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
Total # of Thefts	88	74	23	13	25	14	28	20	46	58
Avg. Value Lost	$460,738	$1,085,671	$194,903	$138,875	$704,685	$6,712,500	$293,727	$387,385	$100,333	$129,010

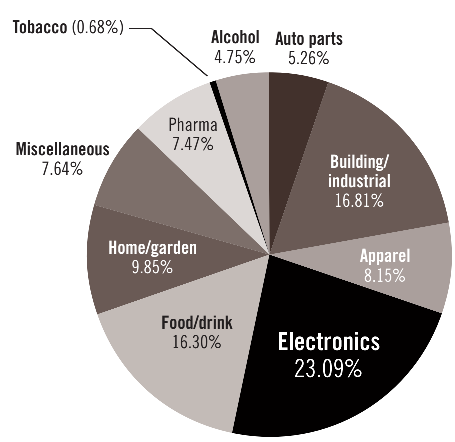
Figures are for Jan.–June 2008 and Jan.–June 2009. Source: FreightWatch International Bi-Annual Cargo Theft Report

Theft Incidents by State (February 2008–January 2009)



Source: FreightWatch International (USA) Inc.

Theft by Commodity
(February 2008–January 2009)



Source: FreightWatch International (USA) Inc.

THE CARGO THEFT THREAT

Recommended Reading

Cargo Theft Prevention: A Handbook for Logistics Security
by Louis A. Tyska and Lawrence J. Fennelly
Published by security professional organization ASIS International, this reference provides a comprehensive guide to developing a cargo security plan and conducting facility audits.
412-741-1495 www.asisonline.org

Contraband, Organized Crime and the Threat to the Transportation and Supply Chain Function
by Mario Possamai
This study explores how the demand for contraband products fuels cargo theft, smuggling, counterfeiting, and product piracy.
412-741-1495 www.asisonline.org

Transportation and Cargo Security: Threats and Solutions
by Kathleen M. Sweet
This book outlines the current global threat to the transportation system and the need for enhanced security programs and individual roles within them.
www.amazon.com/dp/0131703560

Securing Global Transportation Networks: A Total Security Management Approach
by Luke Ritter, J. Michael Barrett, and Rosalyn Wilson
This accessible text introduces the concept of Total Security Management (TSM), in which risk management and security best practices are implemented for a company's entire value chain.
www.mhprofessional.com

stolen property to resell. They gather information on industrial parks and manufacturing/distribution facilities where such items are made or stored, then either break in or set up surveillance positions outside the facilities to monitor shipping operations, in particular the use of trucks.

Depending on which modus operandi the thieves use, they will then wait for the moment of opportunity to strike. If the M.O. is to steal the truck, the thieves may have already secured a warehouse to temporarily store the freight, as well as taken possession of a stolen truck to attach to the stolen trailer. They may even have acquired another trailer to offload the cargo into.

■ Another approach is to pay drivers at rest stops or fueling stations to give up their trucks, or wait until the driver has left the truck and trailer unattended. Thieves are knowledgeable and trained in gaining access to the truck and manipulating the ignition system. They then drive off with the stolen equipment.

■ If a trailer is not connected to a truck–often referred to as dropped or unattended – the thieves hook up their recently acquired stolen tractor to the loaded trailer and move it to a secured location. Or they may break into the trailer and offload the cargo into an empty trailer, further hindering the ability of law enforcement to locate and recover the stolen goods.

■ More sophisticated criminals may steal the truck and/or trailer and dump it on the side of the road or in an industrial area. They can then observe from a safe distance to test whether a tracking system is embedded in the truck and/or trailer, and to see if law enforcement is monitoring the stolen equipment.

If they believe nobody has followed the truck and/or trailer, the thieves will then move it to a secured warehouse location and begin breaking the product down for resale on the black market. Preparing stolen goods for resale may entail changing the packaging, re-labeling the boxes, and even creating falsified bills of lading or customs paperwork to facilitate moving the stolen cargo out of the country.

Goods in Peril

In the United States, the most highly sought after shipments are pharmaceuticals, consumer electronics, apparel, and food. Any product can be stolen, of course, but these commodities are reported stolen most consistently.

As demand and prices for certain goods rise, cargo thieves update their lists of commodities to target and fence. For example, when the price of metals such as gold, platinum, copper, or steel rises, their rate of theft increases, illustrating the level of sophistication criminals attain to keep their enterprises profitable. With the current economic crisis, food and other necessities such as bottled water have seen a sharp increase in reported thefts.

Don't underestimate cargo theft's rippling effect on the economy. Consider, for example, the theft of a truckload of Nintendo Wii gaming stations that were on their way to a Best Buy distribution center serving the Atlanta metropolitan area one week before Christmas.

Best Buy won't be able to get a replacement shipment from the vendor in time to meet the demands of its customers. Instead, those customers will seek out another retailer in the same area that has the desired product. Best Buy will lose not only those sales, but potential related sales such as games and accessories. Also, customers may not return to the store that did not have the product they wanted a few weeks earlier.

The trucking company involved will

likely be held liable for the loss and have to pay Nintendo or Best Buy for the stolen product. Even if the trucking company has insurance, it may not cover the entire loss because of the policy deductible. Reporting the theft may also result in higher insurance premiums next year.

That's not all. The trucking company may raise rates for future shipments of this product to cover losses it incurred either through out-of-pocket expenses or by paying higher insurance premiums. Those additional costs will be passed on to Best Buy, which will pass them on to customers.

Finally, the government could potentially lose out on needed revenue through sales tax on those items.

Failure to Report

While estimates place cargo theft's costs in the tens of billions of dollars, it is difficult to calculate because crime often goes unreported. Given the choice between recovering their stolen cargo or being made financially whole, most cargo theft victims would likely choose the latter to avoid quality control issues. Stolen perishables or pharmaceuticals, for example, may not have been maintained in temperature-controlled environments, creating potential for a serious health crisis if the recovered product is sold.

Another possible drawback to reporting cargo theft is negative public perception. A carrier could lose current or potential customers who fear the company was involved in the theft or does not have proper security standards and protocols in place.

Retailers may not want to acknowledge that they were victims of cargo theft, either. The perceived supply chain weakness could give its competitors a strategic advantage.

Even if the company involved has cargo insurance, it may find its policy insufficient. As cargo theft has increased and insurance companies have had to pay out more for losses, trucking policies have started to exclude protection/coverage if a truck is left unattended. The policies may also include geographic limitations excluding theft losses occurring in areas with high theft rates, such as Miami and Los Angeles. Additionally, the specific types of goods often targeted for theft may be excluded from coverage. Finally, some policies won't cover theft if the driver is involved, or won't cover the loss if it is a result of theft.

Cargo theft is a complex problem affected by factors ranging from local laws to the global economy. The National Cargo Theft Task Force (*see sidebar, page 244*) has combined the efforts of law enforcement, insurance agencies, and trucking companies to capture the issue's scope, support theft victims, and determine how to combat the situation. Developing this understanding is the first step in curbing cargo theft. ■

Jared S. Palmer, general counsel for AFN, a Niles, Ill.-based 3PL, serves as chairman of the National Cargo Theft Task Force's Government Affairs Subcommittee and sits on the executive committee for the Transportation & Logistics Council. Contact: 866-766-8348 or jpalmer@afnww.com

DOUBLE TROUBLE

Avoiding Excess Freight Charge Liability Risk

In cases of double payment liability, innocent shippers and consignees find themselves ordered to pay for services twice. Contracting with a reputable broker can protect you from ending up in this situation.

by Roger F. Huff

The world of cargo contracts, insurance, and liability can be complex and confusing. Shippers who aren't careful can find themselves facing legal fees... and worse.

Imagine you hire a painting service when you redecorate your house. The painting service hires a worker to do the job, then the service sends you a bill, which you pay.

But suppose the painting service doesn't pay the worker, and he sends you a bill for the job. Obviously, you shouldn't have to pay again. If the worker takes you to court, however, you may be ordered to do just that.

This is a double payment liability situation.

Shippers and consignees face potential double payment liability to motor carriers for freight transportation charges. In three recent federal cases, courts imposed double payment liability:

1. For non-brokered shipments on consignee Kawasaki Motors.

2. For brokered shipments on shipper and consignee Sears, Roebuck & Co.

3. On consignees Peters Hospitality and Polaroid Electronics for loads passing through a freight forwarder *(for details, see case study sidebars).*

These cases illustrate the breadth of potential double payment liability that may arise any time a load moves–regardless of whether or not a transportation intermediary, such as a freight broker or forwarder, is involved.

EXERCISING DUE DILIGENCE

No one can disparage motor carriers that bring double liability claims against financially viable shippers/consignees. After all, the trucking company has performed a valuable service and is simply trying to be paid for it.

The problem is, the financially viable shipper or consignee may have to pay twice if a bankrupt or insolvent third party absconds with the fees. Shippers and consignees can avoid being taken to court on one of these claims by exercising due diligence in selecting a freight broker for their transportation needs.

Double liability claims can be defeated, of course. The court will uphold clear, contractual liability specifications for freight charges. Something as simple as properly marking bills of lading can be a determining factor. "Freight pre-paid" typically imposes primary liability on the shipper, while "freight collect" places primary liability on the consignee.

Given the high cost of litigation, however, even successfully defending a double payment liability claim hardly feels like a victory. You have simply lost less than you would have otherwise.

What you really want to accomplish is avoiding any such suit in the first place. But shunning broker and forwarder relationships isn't a viable option because outsourcing motor carrier transportation to freight brokers makes bottom-line economic sense. In fact, Federal Motor Carrier Safety Administration (FMCSA) findings document significant savings for shippers who use brokers.

"General commodities brokers and freight forwarders offer valuable services to the business community," states the FMCSA report *Registration of Brokers and Freight Forwarders of Non-Household Goods*. "They work with motor carriers to find less-expensive transportation alternatives for commercial shippers and provide additional services to assist

DOUBLE TROUBLE

CASE #1

Spedag Americas Inc. vs. Peters Hospitality and Polaroid Electronics, et al.

Airfreight carrier Spedag entered a contract with freight forwarder Transworld Freight Systems in which Transworld agreed to pay Spedag for transporting electronic equipment from shippers in Asia to U.S. consignees Peters Hospitality Group LLC and Polaroid Consumer Electronics LLC. Transworld agreed to bill and collect freight charges from Peters and Polaroid, and to forward the payments to Spedag.

Spedag transported the equipment on straight bills of lading that identified Peters and Polaroid as consignees. Peters and Polaroid promptly paid the freight charges to Transworld. After a time, however, Transworld stopped remitting payment to Spedag. Eventually, Transworld filed for bankruptcy, having collected $850,000 from Peters and Polaroid without remitting the fees to Spedag.

Spedag then sued consignees Peters and Polaroid, contending that they remained liable for its entire outstanding $850,000 freight bill, even though the consignees had already paid that amount to the now-bankrupt Transworld.

Peters and Polaroid raised numerous defenses to Spedag's claims. Although the court found that there were questions of fact as to Peters' and Polaroid's mitigation of damages defenses, it ruled in favor of Spedag on the issue of "double liability," holding both consignees liable to the carrier for freight charges.

shippers. Without these intermediaries, shippers would have to devote additional resources to locating and negotiating with motor carriers, and would likely incur higher transportation costs. Small businesses, in particular, would be at a disadvantage if they couldn't rely on the services provided by brokers and freight forwarders."

The transportation industry's increased use of brokers, coupled with a cost-benefit analysis, reflect the economic advantages of using brokers rather than incurring the cost of establishing an internal transportation division to secure vetted motor carriers at competitive price points.

The courts have admonished shippers and consignees in double payment liability cases to use the services of "reputable" forwarders/brokers as a way to avoid future lawsuits. What are the characteristics of a "reputable broker," and how do you exercise due diligence to make that determination?

Three qualities characterize a reputable freight broker: financial stability,

CASE #2

Oak Harbor Freight Lines vs. Sears, Roebuck & Co.

Sears, Roebuck & Co. contracted with broker National Logistics to secure motor carriage for Sears' product. The broker, in turn, contracted with Oak Harbor to move the freight. Sears was the shipper on some loads; the consignee on others.

Before the suit was filed, Sears had paid National Logistics more than $225,000, from which the broker was to pay Oak Harbor. National Logistics did not pay Oak Harbor, however, and the motor carrier sued both the broker and Sears.

Sears asserted that its $225,000 payment to the broker should be credited against Oak Harbor's $425,000 claim. But the court rejected Sears' arguments and held the retailer jointly liable with the broker for Oak Harbor's entire claim.

DOUBLE TROUBLE

adequate insurance, and a long-standing good reputation that includes shipper/consignee service and prompt payment to motor carriers.

MONEY MATTERS: FINANCIAL STABILITY

If you do your homework, it is easy to determine a broker's or forwarder's financial stability. Independent companies such as Dun & Bradstreet (D&B), Experian, and Cortera provide business reports that include credit history, liens and lawsuits, Uniform Commercial Code (UCC) filings, and summaries of timeliness in debt payments.

Require a prospective broker or forwarder to provide you its D-U-N-S Number, an identification code assigned to each physical location for companies registered with D&B. Use the number to help track the broker during your due diligence.

Of particular interest in evaluating a freight broker is its D&B PAYDEX score, which evaluates a company's timeliness in debt payments. Scores range from one to 100, with higher scores generated by a company's payment of debts prior to due date terms.

If a company, on average, pays its debts on time (typically within 30 days), it earns a PAYDEX score of 80; if it pays 30 days before the due date, it earns a PAYDEX score of 100. A PAYDEX score of less than 80 raises a red flag.

Another point to consider is whether a broker factors its accounts receivable (A/R). In this practice, a company sells its A/R to a factoring company for an average of 80 percent of the invoice value. When the invoice is paid, the factoring company gives the broker the remaining funds, minus its fee. The broker is trading a portion of the money it is due for immediate cash.

In the highly competitive freight brokerage business, many brokers operate on a thin profit margin, and the immediate cashflow A/R factoring delivers can help meet expenses. But engaging in this practice raises a red flag because it indicates that the broker may be operating at break-even, or worse.

When researching a potential broker, be sure to check UCC filings. If the company is factoring its A/R, the UCC financing statement will clearly state that the secured creditor holds a security interest in accounts receivable. Lenders other than factors will sometimes secure equipment or mortgage loans with A/R, so research the secured creditor listed on the UCC to determine if it is a factor.

If you doubt whether a secured creditor is factoring the broker's accounts, get the prospective broker's written consent for the creditor to disclose any factoring or other security agreements.

UNDER COVER: ADEQUATE INSURANCE

Another hallmark of a reputable broker or forwarder is adequate insurance coverage. Keep these three considerations in mind: insurance supplementing the broker's bond/trust fund, contingent cargo insurance, and general liability insurance.

The FMCSA requires registered freight brokers to post a minimum broker's bond or establish a $10,000 trust

DOUBLE TROUBLE

CASE #3

Harms Farms Trucking vs. Woodland Container and Kawasaki Motors

Consignee Kawasaki Motors directly contracted with shipper Woodland for delivery of 90 shipments of pallets. Woodland verbally contracted with motor carrier Harms Farms to deliver the pallets, which the motor carrier did, and Woodland billed Kawasaki for Harms Farms' freight charges.

Kawasaki paid Woodland $27,000 of those charges, with Woodland agreeing to forward payment to the motor carrier. Woodland sent a check for partial payment to Harms Farms, but the check was returned for insufficient funds and Woodland never made good on the check nor paid any of the freight charges.

Harms Farms sued Kawasaki, and the court held the consignee liable to the motor carrier for the entire remaining balance of freight charges, even though Kawasaki had already paid $27,000 to the shipper. Woodland was ultimately insolvent and statutorily dissolved.

fund so it can pay shippers or motor carriers if the broker fails to carry out its contracts. Most brokers simply comply with the $10,000 minimum; however, a broker may elect to purchase supplemental insurance/bond coverage for higher limits.

The supplemental limits provide a layer of insurance protection in the event a broker defaults on its obligations and exhausts the $10,000 bond/trust fund. Supplemental coverage is typically offered in increments up to $100,000. While larger supplemental limits may be offered, premiums for these policies are correspondingly higher and must be passed on to a customer.

A broker that carries a higher limit supplemental policy and remains price competitive is the broker of choice for several reasons.

First, obtaining supplemental coverage demonstrates the broker's commitment to fulfilling its obligations.

Second, both the bond and supplemental policy/bond proceeds are available should the broker fail in that commitment.

Finally, insurers offering such coverage require the broker to meet more stringent underwriting requirements than one who simply posts a minimum surety bond or trust fund. Think twice about working with a broker who can't meet those underwriting requirements.

The FMCSA's SAFER Web site allows you to track a broker's filings with the Administration. The site, however, only reflects whether a broker has met its minimally required $10,000 bond/trust fund; it does not show voluntary higher limits coverage data. Voluntary higher limits coverage should be documented via a certificate of insurance coverage.

In addition to bond/trust fund supplements, reputable brokers also invest in contingent cargo insurance. To protect itself and its customers, the broker should secure certificates of coverage for motor carriers' primary cargo and motor vehicle liability insurance.

Additionally, a broker should carry its own contingent cargo insurance, which provides coverage if the motor carrier's primary cargo insurance denies coverage or is insolvent.

Insurance levels should be adequate to cover the value of the cargo on any one shipment. While $200,000 in contingent cargo coverage is typically adequate, a shipper whose cargo will exceed that value should require a higher level, which can be accomplished by a special endorsement to the policy or via spot coverage.

Finally, ensure the broker carries adequate general liability insurance, and get a certificate of coverage. Although your company probably will not qualify as an insured party under a broker's general liability policy, the fact that the broker carries such insurance is a good sign. A broker operating without a general commercial liability policy of at least $1 million is a sign of trouble.

SMART PARTNERS: SOLID REPUTATIONS

Perhaps the simplest indication of a trustworthy broker is its business reputation. Longevity bears on a broker's experience and establishes a longer track record for evaluation, but it is not the sole criterion by which to judge a broker– every long-standing business was once a start-up.

Think of choosing a broker as similar to interviewing a job applicant. Look for good references. Recognizable, long-standing customers who vouch for the broker's service record are a positive sign; caveat emptor if a broker is reluctant to provide those references. In addition, the broker's D&B PAYDEX score will provide information that reflects its relationship and reputation with motor carriers.

Conducting due diligence when selecting freight brokers can greatly reduce your potential to be exposed to a double payment liability claim. Consider due diligence an investment in your company's financial security. ■

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IT Toolkit

Bar Codes Rev Up Auto Supplier Operations

Bar-code technology has helped revolutionize the automotive industry by providing fast, accurate inventory and shipping information for supply chain partners to share. But just because a manufacturer deploys bar-code scanners in its facilities doesn't mean it is using the technology effectively.

An end-to-end scanning solution helps Trelleborg Automotive Americas improve efficiency and accuracy, while providing real-time production data and lot traceability.

Take Trelleborg Automotive Americas, for example. The company had been scanning bar codes in its factories for several years. But disparate shipping and receiving systems were outmoded and operated independently of each other, and production staff relied on paper tickets to track work in process.

Trelleborg Automotive Americas is part of Trelleborg AB, a global supplier to the automotive, aerospace, and construction industries. The Americas division is primarily a rubber injection operation that makes anti-vibration parts including engine mounts and hydro bushings for automotive OEMs such as Ford and GM, as well as suppliers including TRW and Delphi.

"We needed to take the bar-code system to the next level, gain the ability to trace lots, and eliminate manual paperwork," says John Jacobs, IT developer at Trelleborg. "We wanted a complete electronic system from receiving back to shipping."

The company also wanted to replace its manual job tickets with a bar-coding system. "Under our old paper system, operators manually recorded traceability information, the parts they made, what kind of scrap was generated, and what machine they were working on," Jacobs says. "That information was then entered into the ERP system."

Operators on the factory floor had to manage these paper tickets and record production information by hand, in addition to running their machines.

CONTINUED FROM PAGE 255

Trelleborg found its solution when IT Manager Kevin Warner attended a project management training class and learned about Integrated Barcoding Systems (IBS), a data collection solutions provider based in Adrian, Mich. Impressed with what he heard, Warner visited an IBS customer site to see the company's *QuikTrac* data collection software in action.

Trelleborg eventually chose to deploy *QuikTrac* because it could integrate the solution with an existing ERP system from JBA International (now part of Infor).

"The ability to integrate was a key deciding factor, because when we started looking for a new solution our AS400 programmers said the ERP system was so customized it would be difficult for the bar-code guns to interact with it," Jacobs says. "But when IBS implemented the integration, we experienced very few problems."

Trelleborg also selected *QuikTrac* because it could cut costs by developing and expanding the bar-code system using internal resources.

Now that it has been implemented, the *QuikTrac* system allows Trelleborg complete visibility, from the time raw material arrives at the plant until finished goods are shipped to customers.

As raw material arrives at the dock door, employees in the receiving area scan the bar-coded labels on the boxes using Intermec CK31 mobile computers with integrated scanners. Once received, materials are stored in one of several warehouses located at each plant.

"We use the bar-code serial number on the box for lot traceability," Jacobs says. "Once the material is scanned, the system tells us which warehouse it goes to."

Trelleborg Automotive Americas
SANDUSKY, MICHIGAN

SOLUTION AT A GLANCE

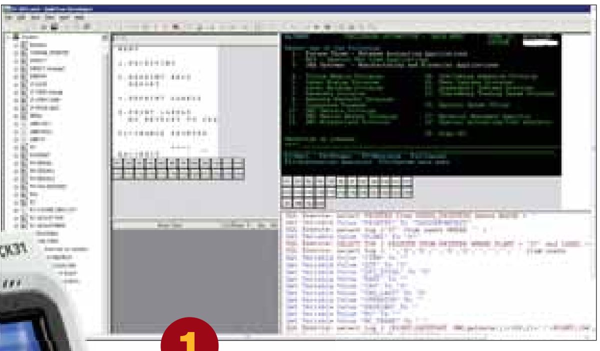
BAR-CODE SYSTEM
APPLICATION:

Shipping, receiving, inventory management

BAR-CODE SYSTEM
BENEFITS:

- Eliminates manual paperwork
- System can be taken offline without interrupting workflow
- Reduces the time for taking physical inventory by half
- Operators can focus on running their machines instead of handling paperwork
- Cuts time to build a skid of product from 10 hours to eight hours
- Reduces inventory adjustments
- Improves shipping accuracy and efficiency

BAR-CODE SYSTEM
COMPONENTS ►



1 ***QuikTrac* software from Integrated Barcoding Systems**

2 **Intermec CK31 handheld computers**

3 **Zebra Technologies bar-code label printers**

Before being stored, though, the material goes through a quality control (QC) check process. The quality department receives a report as soon as material arrives, which has condensed the time it takes for materials to be released for the QC check.

"The box can't go any farther without that quality control check," Jacobs notes.

LET'S GET VISUAL

Once an order comes up from the production floor, fork truck drivers retrieve the material from the warehouse. The retrieval process is largely a visual system, as Trelleborg does not currently use the bar-code scanning solution to manage inventory in the warehouses.

Team leaders on the plant floor scan a bar-coded job worksheet, which retrieves the bill of material from the AS400.

"At that point, the operators know all the material that has to be at the production press, and they scan the boxes that come from the warehouse," Jacobs says. "The system won't let them proceed until they have scanned all the material they need."

Trelleborg uses label printers from Zebra Technologies and laser printers from HP to produce shipping labels and job sheets.

Products are packed into their final shipping boxes on the plant floor as they are manufactured. "As a job is finished, we scan the boxes to collect data on the finished goods as well as the scrap," Jacobs says. "*QuikTrac* updates the ERP system immediately."

The finished goods then undergo a final quality control audit, a process that the scanning system has expedited.

"Under the old system, auditors had to scan each box as it was palletized," Jacobs recalls. "They no longer have to do that because we scan everything on the plant floor. The system validates that there are 72 boxes for the pallet, and the auditors do the quality control check."

Once the boxes move into the shipping area, they are scanned against the shipment information to validate the right boxes are loaded onto the right trucks, and Trelleborg issues an electronic advance shipping notice (ASN) to its customers.

The bar-code system provides Trelleborg with complete visibility, from the time raw material arrives at the plant until finished goods are shipped to customers.

Trelleborg piloted the *QuikTrac* solution in its Sandusky, Mich., plant, and has since deployed it at two locations in Morganfield, Ky., as well as at a second location in Sandusky.

Staff in the receiving area only required minimal training, because they had been using a similar system already. The production staff, however, participated in longer training sessions.

"The production workers had never seen the scanners before," Jacobs says. "That worked to our advantage, however, because during training they suggested improvements that we could implement quickly using *QuikTrac*."

BOOSTING ACCURACY, EFFICIENCY

Trelleborg has seen significant improvements in accuracy and efficiency since deploying the end-to-end bar-code system. For one, the company has cut its physical inventory effort by 50 percent by replacing the manual system. "The manual system was extremely labor-intensive and mistake-prone because all instructions were handwritten. We had to interpret them after the work was completed," Jacobs says.

Second, operators on the plant floor no longer have to manage the paper job tickets, and instead can concentrate on their work. "We build a full skid of product as finished goods are made," Jacobs says. "It used to take 10 hours to fill one skid; now it takes fewer than eight hours."

Third, inventory adjustments at the pilot facility have decreased. "We discovered that some machinery on the floor was miscounting product, and the system let us catch those mistakes and fix the problem," he says.

Finally, shipping accuracy has improved. "We've caught mistakes such as the wrong product being scanned, and we've stopped some raw material from being shipped out the door," Jacobs says. "The system alerts us immediately if we've got the wrong box. We've definitely seen improvements there."

WORK NEVER STOPS

When the IT staff needs to work on the ERP system or run reports, it can easily take the *QuikTrac* solution offline without disrupting any operations. This functionality also keeps operations running smoothly if the back-end system should go down unexpectedly.

"If our system goes offline, the users don't have to sign off. In fact, they don't even know the system went down," Jacobs says. "They just keep working."

Trelleborg operates eight plants, and plans to roll the system out at additional facilities in Michigan, Illinois, and Mexico.

Eventually, the system will allow Trelleborg to track raw material usage during production. "We'll be able to watch how much material we're actually using, compared to what the bill of material says we should be using," Jacobs says.

QuikTrac will also help the company compare the overall equipment effectiveness of its machines during production, which will improve efficiency even further and allow for preventive maintenance. ■

Casebook

by Mike Breslin

HEALTHCARE LOGISTICS

A New Prescription for Medical Distribution

Linking bar-coded pharmaceuticals and electronic patient records helps the Sisters of Mercy Health System streamline supply chain operations... and save lives.

There's nothing new about hospitals using bar codes for supplies and drug formularies. But few large U.S. healthcare supply chain operations have integrated bar-coded medications with patient electronic health records (EHR) as successfully as the Sisters of Mercy Health System.

Mercy, the United States' eighth-largest Catholic healthcare system, employs more than 35,000 workers and operates 21 acute care hospitals, two heart hospitals, and a rehabilitation hospital with more than 4,300 licensed beds and 1,200 integrated physician practices in Oklahoma, Kansas, Missouri, and Arkansas. The extensive network requires complex internal supply chain management to keep operations running smoothly, and Mercy excels in this area.

"Mercy places importance on its supply chain operation," says Tim Dryer, public relations manager for Lincolnshire, Ill.-based Zebra Technologies, which provides the bar-code systems used by Mercy. "And, by improving supply chain efficiencies, Mercy has realized benefits in other areas."

Like many healthcare organizations, Mercy took a hard look at its logistics system after a groundbreaking 1999 national study by the Institute of Medicine reported that medication errors are the eighth-leading cause of death in the United States.

"In 2001, we met with our pharmacy directors and suppliers to address the national problem," says Dr. Jon Lakamp, executive director of Mercy Clinical Support Services. "We knew we were going to implement EHRs, and that we could reduce medication errors at the point of administration by using bar-coded verification."

The first step was transitioning to high-tech prescriptions. Handwritten

CONTINUED FROM PAGE 259

prescriptions leave room for errors, and verifying them can be time-consuming for both pharmacists and doctors. Prescriptions entered into a computer system reduce errors by one-third and are five times less likely to require pharmacist clarification than handwritten prescriptions, according to a study by the Oregon Health and Science University.

Mercy implemented an EHR software solution called EPIC, which eliminated handwritten prescriptions for more than 4,000 physicians.

But simply computerizing the prescriptions wasn't enough. Expanding Mercy's technology to deliver prescribed medicines to hospital and clinic patients was a tremendous undertaking that triggered a complete restructuring of Mercy's supply chain.

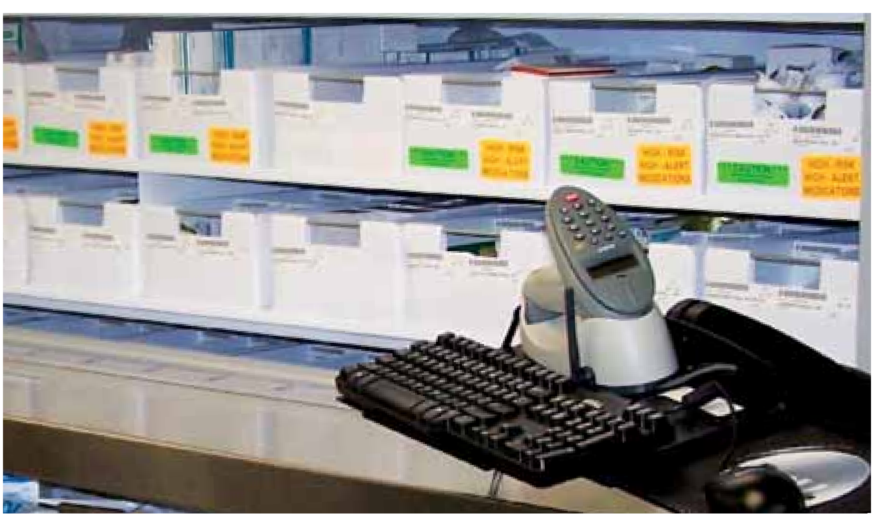
"We needed to verify that patients in our hospitals get the right medication in the right dose at the right time via the right route," explains Lakamp. "To do that, we needed bar-coded, scanned medications in a unit-dose format ready to be administered."

Achieving that goal required significant changes because of the scope of Mercy's internal supply chain, which is handled by Resource Optimization and Innovation (ROi), an operating division of the Sisters of Mercy Health System.

"Mercy is different from most hospital systems because it does not use a third-party provider to manage its supply chain," says Cristina DeMartini, market development leader at Zebra. "By bringing all shipments into a centralized distribution and automated repackaging center, Mercy basically acts as its own supply chain."

Mercy budgeted approximately $35 million to implement the hospital's and clinic network's software, switch to automated dispensing equipment, and upgrade warehouse operations to repackage medications.

With the Mercy Meds system, hospitals and clinics stock their shelves with bar-code-labeled unit-dose medications and medical supplies (*below*). Nurses administering a dosage scan the label (*above*) to record the activity and link it to the patient health record, which is also tracked using bar-code labels (*left*).



BUILDING ON NEW TECHNOLOGY

Mercy had been using Zebra coding technology for parts of its supply operations, and staff found it reliable and easy to use. For the new Mercy Meds system, Zebra Z4M and TLP344Z printers were installed at Mercy's consolidated service center in Springfield, Mo. This warehousing-repackaging hub receives shipments of medications and medical-surgical supplies from a variety of vendors, then repackages and redistributes them to hospitals, local physician practices, and clinics via Mercy's tractor-trailer fleet.

"Before we implemented the new model, each hospital and clinic received numerous deliveries arriving at different times, often crowding loading docks and causing general confusion," says John Black, vice president of supply chain for ROi. "It was inefficient and costly."

To support the new software interfaces with the hospital-clinic network, ROi's central facility in Springfield needed major upgrades. In late 2003, facility improvements began, including constructing a clean room and installing automated repackaging equipment. Because pharmaceuticals were to be repackaged, the facility had to

CONTINUED FROM PAGE 260

become compliant as a Food and Drug Administration-registered location. The new bar-coding system generated labels for shelves, unit-dose medication, and totes, as well as shipment tracking labels.

> **"Since implementing Mercy Meds, we have improved shipping accuracy by 50 percent and increased labor productivity by 20 percent."**
>
> – John Black, vice president of supply chain, ROi

TRAINING DAYS

While refitting at the warehouse proceeded, Mercy tested the new system at a few nurses' stations. It evaluated pharmacist ordering, medication disbursement, patient administration, demand planning, and replenishment processing tasks.

Because the new system changed the way Mercy prepared, delivered, and administered medication, it was critical to thoroughly educate and train all operational and clinical supply chain participants in the process.

It was equally important that everyone understood how pharmacy script interfaced with EPIC, how EPIC linked to the dispensing cabinet and the bedside verification station, and, ultimately, how the supply chain was replenished through the centralized warehouse repackaging operation and the pharmacy wholesaler.

Nursing staff had to be trained to migrate from a paper-based medication administration record to an electronic one, and pharmacists had to assume a quality-assurance role in reviewing packaged medications.

Finally, with all the improvements and training completed, Mercy Meds rolled out in June 2003. Nine months later, it was fully functional in more than 90 percent of Mercy hospitals and clinics.

With the new system, medications arrive at the ROi warehouse to be repackaged into unit-dose tablet or capsule form, individually bar-coded, and shipped to hospital pharmacies. As prescriptions are entered into the EPIC system, the pharmacy dispatches medication to the nurses' stations and records the prescription information on the patient's EHR. If pharmacy inventory runs low, a worker scans the shelf code and sends a replenishment order to ROi. Medication cabinets on the nursing floors generate replenishments based on pre-determined minimums.

When a replenishment order is received at ROi, the system generates a bar-coded tote label to pull the order and pack the tote. The label can be affixed to the tote for tracking. When delivered, the tote goes directly from the truck to the pharmacy or nursing floor.

Today, Mercy hospitals receive one shipment per day for all their medication and medical supplies, a considerable improvement over the multiple shipments from multiple vendors they used to receive daily.

"Since implementing Mercy Meds, we have improved shipping accuracy by 50 percent and increased labor productivity by 20 percent," says Black. "We can now manage inventory more strategically across the entire organization, ensuring that products are at the right location when needed.

"We also have a powerful database that helps us keep expired medications out of the pharmacies, and we can react immediately to purge the system when a product is recalled," he adds.

Continuous improvement is also part of Mercy's plan for the system (*see sidebar, below*). "We are never totally done," says Lakamp. "We are always tweaking it."

Thanks to Mercy Meds, the healthcare network averts an estimated 17,000 potential medication errors annually, saving $14 million a year on treatment and litigation costs. More importantly, Mercy's technology investment has provided the tools to deliver safe medications every time. ■

A Change of EPIC Proportions

Implementing the EPIC electronic health records (EHR) solution put the Sisters of Mercy Health System on the cutting edge of hospital information technology. Less than two percent of U.S. hospitals have fully functional EHRs, according to a 2009 Harvard School of Public Health study.

Most hospitals cite cost as the barrier. Health information systems costs range from $20 million to $100 million, depending on hospital size and system complexity. They also take several years to implement because the reliability and accuracy of a system that delivers drugs to sick patients and records medical details is often a matter of life and death. Finally, training can be time-consuming and expensive.

Combining technology with advanced logistics holds great promise to rein in runaway costs while simultaneously improving patient outcomes and reducing medication errors. Mercy continues to lead the pack with Genesis, its multi-year project for integrating and centralizing its systems, including Mercy Meds and EPIC. Currently, Genesis is fully deployed at more than 75 percent of Mercy's operations.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in 13 states.
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just another
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We'll take it from here.SM
To bring your non-stop world of motion into focus, visit propak.com or simply dial 1.877.919.1600.

DC Solutions

by Joseph O'Reilly

Learning by Example

When The School Box opened shop outside Marietta, Ga., in 1990, David Persson and his wife Christine were committed to bringing the learning experience closer to home–for both educators and parents.

Acquiring a warehouse and following the innovation and imagination of a WMS helped The School Box earn top grades for its distribution operation.

That mission hasn't changed, but The School Box's audience has. Now it delivers its message through 14 retail stores in Georgia and Tennessee, plus a mobile unit that delivers to rural areas, and a ballooning catalog and e-tail business.

The School Box sells a variety of educational products such as children's literature, teaching resource books, classroom decorations, arts and crafts supplies, and e-learning software. It maintains an inventory in excess of 22,000 SKUs, with about 60 percent of its business coming from in-store customers and 40 percent from catalog and Internet business.

Sticking to its core paid dividends for The School Box as it built a brick-and-mortar presence, but eventually it fell victim to its own success. "By 2008, we had outgrown our logistics strategy," says David Persson, the company's owner and CEO. "We realized that distribution was our weak link."

This dilemma is common for small businesses, which initially grow by building consumer affinity and focusing on their brand and products–not their warehouse. The School Box fulfilled orders from an 18,000-square-foot area shared with one of its retail shops, and it didn't have room to manage peak season overflow.

"The old warehouse was attached to one of our stores," explains Persson. "Some inventory was actually positioned in the retail space. Customers would sometimes pick up products and move them. We didn't know where anything was, and we were generating backorders for product that was in our facility."

The School Box experiences a six-week summer rush when demand for educational supplies peaks in anticipation of the new school year. In the past, it leased additional warehouse space nearby and shuttled inventory between the two stock points.

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With bunches of pre-allocated orders idling, the retailer was constantly maintaining pallet positions. It had no item-level visibility, and finding SKUs was tedious and time-consuming.

"We were handicapped by the space we were in," Persson says. "We needed a facility more suited to distribution."

BACK TO BASICS

In late 2008, The School Box partnered with Cambar Solutions, a warehouse management system (WMS) vendor based in North Charleston, S.C., to help equip a new 40,000-square-foot distribution facility. The objective was twofold: to expand into a new warehouse and support that space with better IT infrastructure.

The School Box used a tried-and-true 18-year-old point-of-sale solution to run its warehousing operation. The legacy module was appropriate for capturing orders but inadequate for managing the company's growing distribution needs. Working with Cambar and the vendor's mobile computing channel partner, Norcross, Ga.-based LXE (*see sidebar below*), The School Box installed a complete technology footprint powered by the WMS.

Cambar, founded in 1981, installs WMS solutions for large and small companies, but is predominantly focused on mid-market customers such as The School Box. "They generally lack technology, but have been around long enough to make a go at an IT investment," says Rick Register, president and chief operating officer of Cambar Solutions. "Mid-tier firms understand the need to become efficient and manage more space without scaling up labor."

Persson didn't have much distribution experience, but he had an idea what the company needed and was willing to adapt. "We had a rough layout for the new facility," he says. "But after installing Cambar's WMS, we re-shelved 25 percent of the warehouse space to be more efficient."

Because many of The School Box's problems were interrelated, starting from scratch was beneficial and resulted in opportunities for immediate return on investment.

"We usually retrofit warehouse technology to an existing footprint," explains Register. "But with a new facility, we can set up the WMS from scratch and position equipment where it needs to be."

Cambar visited the new facility for one week to learn more about its business, understand its needs, and figure out how to properly integrate the new system.

"My objective was to get through the process without asking for modifications, which surprised Cambar," recalls Persson. "We were willing to change our approach to fit the WMS."

After the three-month WMS rollout, improvements were fast and widespread. Moving into the new DC allowed The

Going Mobile

Early in The School Box's business requirements study and planning phase, Cambar Solutions knew the WMS installation would project a paperless solution for the company's largely manual, paper-driven warehouse culture.

"As part of the implementation, we presented options for mobile computing and radio frequency (RF) equipment through our channel partner LXE," says Rick Register, president and chief operating officer of Cambar Solutions.

David Persson, owner and CEO of The School Box, had spent six months researching how other cross-industry warehouses were using mobile solutions for distribution and fulfillment. "I was looking for a commonality among solutions, but I saw five different set-ups," he recalls.

Cambar gave The School Box RF infrastructure for mobile computing hardware and software, then married it to the WMS and existing point-of-sale module, and trained employees how to use the equipment.

Now the company uses 16 LXE mobile computers for inventory receiving, putaway, picking, cycle counts, and stock replenishment—and has plans to order more.

Mobile computing has allowed The School Box to keep better track of inventory, decrease picking errors, react faster when problems occur, and improve warehouse throughput. Monitoring labor productivity also helps create benchmarks and reward performance.

Mobile computers help speed The School Box's warehouse operations.


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• FREIGHT SECURITY & RISK MANAGEMENT
• CARRIER SAFETY
SPECIALTIES
TRUCKLOAD • VAN • TEMP CONTROL • FLAT
HEAVY HAUL & SPECIALIZED EQUIPMENT
LTL
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CUSTOMIZED FREIGHT MANAGEMENT SOLUTIONS
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TIA
nasstrac
CSCMP
NITL
ISO 9001:2000
Tucker Company Worldwide, Inc.
AN INBOUND LOGISTICS MAGAZINE "TOP 100 3PL"

CONTINUED FROM PAGE 266

School Box to better utilize space and jettison its leased warehouse during the summer. With product centralized in one facility, it was also able to eliminate overages because it had better inventory visibility.

"In our initial business requirements study, we talked The School Box through the system's capabilities and how to take advantage of them," says Register. "Then we walked them through the movements and sequencing within the warehouse."

1 DC + 1 WMS = INFINITE ROI

The structural and strategic transition triggered a cascade of efficiencies throughout the enterprise, rationalizing transportation costs, expediting order fulfillment, increasing accuracy, and improving customer service–all of which go straight to the bottom line.

In the past, The School Box sent pre-allocated inventory to its stores, using historical data to make educated guesses about what they would need in the coming weeks.

If demand for a specific SKU was hot and the retail shop sold out, replenishment couldn't keep pace and sales were lost. Conversely, if a product didn't sell, stores were left with high stock counts. The School Box didn't have the flexibility or visibility to quickly flow inventory in and out of its facilities to react to changing consumer patterns.

"Today, our surpluses are in the warehouse, where we have visibility, and not in the store, where we didn't," says Persson. "We have less inventory in our system with the new DC, despite the fact that we have opened two new stores in the past year."

The School Box has similarly eliminated the need and cost of transferring inventory store-to-store and warehouse-to-warehouse. Historically, 40 percent of The School Box's inventory was shipped direct-to-store, and it might send 14 pieces in one shipment instead of building and consolidating loads for multiple store deliveries. Transportation and labor costs spiraled out of control.

"In 2009, we cut our freight spend in half because all inventory came into and moved out of the DC," says Persson. "In some cases, we now qualify for free transportation from our vendors because we have consolidated our volumes."

Thanks to The School Box's new WMS, warehouse staff no longer have to hunt down products to fill shipments.

EXTRA CREDIT

Opening a new distribution facility furnished with innovative WMS and mobile computing technology has enabled The School Box to take advantage of upstream opportunities that were never possible before.

Because peak demand season is in the summer, school and paper supply vendors offer incentives to buyers who order bulk product earlier in the year. But The School Box could never capitalize on these offers because it didn't have space to store product long term.

Moreover, The School Box used to place just-in-time orders to suppliers closer to peak season. On top of the fact that incentives were lost and smaller, batched orders resulted in higher transportation costs, vendors often ran out of high-demand items. In 2009, all this changed.

"We pre-ordered 157 pallets of paper in February, and we didn't have to replenish inventory throughout the year," says Persson. "We were able to ship via truckload early, check it in, and put it away."

With greater item-level visibility in its new DC, The School Box knows exactly where those SKUs are and doesn't have to worry about finicky shoppers dropping items in odd places.

"We stock white construction paper in eight locations in the new facility, and we know where it all is," says Persson. "In the old warehouse, I had to go out on the floor and look through bins. Now we can go right to the gun, and if a product is not there, we can generate an automatic replenishment. We can drill down to bin-level detail like we never could before."

MOVING AHEAD, ANOTHER YEAR

The School Box's successful rollout of Cambar's WMS and mobile computing set-up earned a one-year audit–a report card that all parties welcome.

"We're in the process of setting up a two-to-three day post-implementation meeting with Cambar," says Persson. "They will talk to employees in the facility, share new features of the system, and suggest ways we can improve our business processes."

For Cambar, the one-year review is part of its value proposition. The WMS vendor visits the customer's site, evaluates the system, and monitors progress. It's an ongoing process.

"Together we might look at how The School Box can ask suppliers for advanced shipping notices or packaging and label requirements, and leverage the system to incorporate standard flows that might get product in the door faster," says Register.

Moving ahead into 2010, The School Box is preparing to take what it has learned and build upon its early successes. After it installed Cambar's WMS, it opened two new stores. Now it's bidding on a major school contract, and will likely win the business. "We wouldn't have been able to do that without the new facility," says Persson.

The School Box's new technology and warehouse help it make the grade–and then some. ■

INBOUND LOGISTICS

2010 READERSHIP SURVEY

Dear *IL* Reader:

Advertiser support enables us to deliver *Inbound Logistics* to you free every month. Readers tell us that they get useful information from the ads in every issue. Given the dynamic nature of the market — particularly your changing needs — advertisers want to make sure that they are communicating their capabilities to you in the best way possible.

You can help *IL*'s supporters ensure their services are the best they can be by taking a few moments to answer these survey questions. All responses will be kept confidential. Your participation will help us continue to bring *Inbound Logistics* to you without charge.

As a thank you for your time and effort, three respondents will be chosen at random to receive a 14k gold Parker pen. If you want to enter the drawing, be sure to include your name, phone number and e-mail address when you submit the survey so we can notify you if you win. And be sure to pass this survey on to your team!

Thank you, as always, for your help and support.

Keith Biondo

Keith Biondo, Publisher

Save time and paper! Submit your answers online at
inboundlogistics.com/readsearch

Or fill out the form on the next page and fax it to us at
212-629-1565

INBOUND LOGISTICS

2010 READERSHIP SURVEY

Save time and paper! Submit your answers online at

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Or fill out this form and fax it back to us at

212-629-1565

1 Please indicate your title:

____

2 Please match your function (check the best one)**:**

- ☐ Corporate Management
- ☐ Supply Chain / Purchasing / Supply Management
- ☐ Transportation / Traffic Management
- ☐ Logistics / Distribution
- ☐ Operations
- ☐ Other

3 Please indicate your company type (select best match)**:**

- ☐ Manufacturer
- ☐ Retail/Wholesale
- ☐ Carrier/Transport Intermediary/ 3PL/Warehouse
- ☐ Services Sector or Government
- ☐ Other

4 Please indicate which transportation or logistics services you currently recommend, specify, approve, or purchase (check all that apply)**:**

- ☐ Air Freight Services
- ☐ Ocean, Ocean Intermodal
- ☐ Small Package, Express Services
- ☐ Logistics Technology (WMS, SCEM, RFID, etc.)
- ☐ Warehousing Services
- ☐ Global Logistics
- ☐ Motor Freight Services
- ☐ Rail, Rail Intermodal
- ☐ Third Party Services
- ☐ Transportation Equipment
- ☐ Materials Handling
- ☐ None

5 Your best guess on how much your company spent on transportation and related logistics services and technology in the last year:

- ☐ More Than $50 Million
- ☐ $10-$49 Million
- ☐ $1-$10 Million
- ☐ $100,000-$1 Million
- ☐ Less Than $100,000

6 How many people are at your location?

- ☐ 1,000+
- ☐ 100-249
- ☐ 500-599
- ☐ 1-99
- ☐ 250-499

7 Please list three third-party logistics companies that excel in meeting your needs.

#1 ________________________

#2 ________________________

#3 ________________________

8 Tell us why you think the 3PL companies you chose in the previous question merit industry recognition.

____

____

____

____

9 What are the most important challenges you face today? (select all that apply)

- ☐ Cutting Transport Costs
- ☐ Reducing Inventory
- ☐ Reducing Labor Costs
- ☐ Reducing Assets and/or Infrastructure
- ☐ Expanding to New Markets
- ☐ Quality Control
- ☐ Sustainability
- ☐ Business Process Improvement
- ☐ Vendor Management
- ☐ Improving Customer Service
- ☐ Technology Strategy and Implementation
- ☐ Security and other Compliance Issues

10 Which is a more important criterion for measuring 3PL performance:

- ☐ Cost
- ☐ Service

11 What is the number-one reason for a failed 3PL partnership?

- ☐ Poor Customer Service
- ☐ Cost
- ☐ More Competitive Options
- ☐ Loss of Control
- ☐ Cultural Dissimilarities
- ☐ Failed Expectations

12 Should companies generally partner with one 3PL or more than one?

- ☐ Just One
- ☐ More than One

13 Regions where your company is outsourcing (select all that apply)

- ☐ Asia
- ☐ Southeast Asia (including India)
- ☐ Middle East/ North Africa
- ☐ Eastern Europe/Russia
- ☐ Europe
- ☐ South America
- ☐ North America (US, Canada, Mexico)
- ☐ U.S. only

14 Name 3 publications that help you most in your job:

1. ________________________
2. ________________________
3. ________________________

15 If you are an *IL* subscriber, approximately how many people read your copy of *Inbound Logistics*?

____

16 THANK YOU FOR YOUR HELP. Please provide your contact info below if you want to be entered into the drawing.

Name ________________________

Phone ________________________

Email ________________________

17 Would you like to start/renew a FREE subscription to *Inbound Logistics*?

- ☐ Yes
- ☐ No

18 If yes, please enter your contact information below.

Name ________________________

Address ________________________

City ________________________

State ____________ Zip ________

SECURITY

LoJack Supply Chain Integrity (SCI)

LoJack SCI's InTransit system delivers a global cargo protection solution that provides 24/7 visibility for shipments in the international supply chain. It uses a combination of GPS and radio frequency to ensure continuous tracking, and offers the option to integrate satellite communications technology while at sea or on railways for coverage in remote locations. The system can be customized for shippers' specific needs to protect goods across any combination of transportation modes, and its tracking device can be embedded in the cargo and/or installed on the trailer or container door to detect and protect against intrusion.

www.lojacksci.com 800-616-8581

MATERIALS HANDLING

Crown Equipment

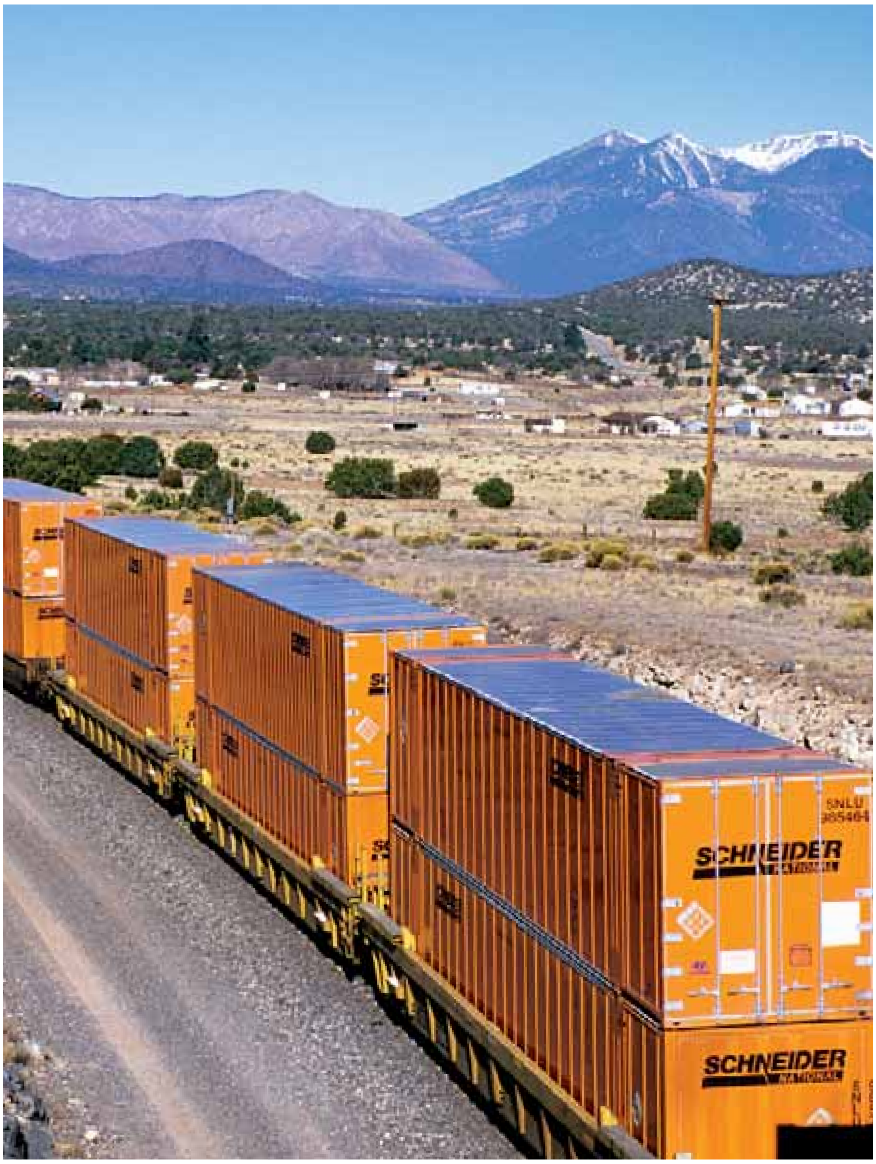
The Crown C-5 Series internal combustion forklifts feature a 2.4-liter industrial engine developed with John Deere Power Systems to prevent overheating and warping. The C-5 Series' On-Demand Cooling system was designed to deliver cooling efficiency and improved performance during acceleration, incline-loaded travel, and carrying or pushing heavy loads. The forklifts also feature a fuel tracking system that alerts the operator when it senses 15 minutes of remaining fuel time.

www.crown.com 419-629-2311

Sellick Equipment Limited

Sellick Equipment Limited introduced the STM55LP trailer-mounted forklift. The low-profile, three-wheel-drive loader is available in capacities from 5,500 to 7,000 pounds.

www.sellickequipment.com 877-735-5425



▲ **INTERMODAL: Schneider National**

Schneider National's intermodal division completed a three-year conversion project, replacing its mixed trailer/container fleet with an all-container fleet. The upgrade provides shippers greater operational efficiencies and cost savings.

www.schneider.com 800-558-6767

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EXPEDITED GROUND

UPS Canada

Processing freight shipments and small package volume, UPS Canada's newly expanded 463,024-square-foot distribution center in Toronto more than doubles the carrier's package processing capacity. The expansion incorporates numerous eco-features, including skylights for more natural light; an energy management system for climate control that automatically detects the amount of sunlight in the building and adjusts the internal temperature accordingly; and an enhanced propane fueling area.

www.ups.com	800-PICK-UPS

PARTNERSHIPS

FreightWatch International and OpenTECH

FreightWatch International, an Austin, Texas-based global trade security solutions provider, and OpenTECH, a Brazilian IT solutions provider, created a joint venture to provide logistics security, consulting, and risk management to the Brazilian market. The agreement allows shippers, distributors, carriers, and insurance providers to build and manage supply chain security.

www.freightwatchusa.com	877-225-6490
www.opentechgr.com.br	55-47-2101-6122

SmartTurn and NetSuite

SmartTurn integrated its on-demand inventory and warehouse management system with NetSuite's business management software suite. The combined solution gives wholesale distributors and e-commerce retailers tools to increase shipment and inventory accuracy.

www.smartturn.com	888-667-4758
www.netsuite.com	877-NETSUITE

MIS Choice and Infotek Consulting

MIS Choice and Infotek Consulting announced a strategic alliance partnership to provide IT support, consulting, development, and training to shippers implementing Infotek Consulting's *Web Freight Pro* freight transportation and warehouse management solutions.

www.mischoice.com	847-690-1900
www.webfreightpro.com	888-481-0300

▲ **AIR: AirBridgeCargo Airlines (ABC)**
ABC added a Boeing 747-400ER freighter to its fleet, enabling it to expand hub operations at Moscow's Sheremetyevo International Airport.

www.airbridgecargo.com	877-262-2746

HighJump Software and iWMS

Eden Prairie, Minn.-based HighJump Software announced an agreement with South African software company iWMS to serve as HighJump's associate in South Africa. HighJump Software and iWMS will jointly implement and support the *HighJump Supply Chain Advantage* product suite.

www.highjump.com	800-328-3271
www.iwms.co.za	27-83-600-9692

EDUCATION

Ashford University

Ashford University, located in Clinton, Iowa, introduced a specialization in Logistics Management, offered online through the university's College of Business and Professional Studies in collaboration with Bridgepoint Education. The specialization augments the university's Bachelor of Arts programs by providing a background in logistics and analytics and giving students insight into using these disciplines to enhance a company's performance and bottom line.

www.ashford.edu	866-711-1700

TRUCKING

Con-way Truckload

Con-way Truckload expanded its regional operations, adding service to Missouri, Kansas, Iowa, Nebraska, Wisconsin, Minnesota, Illinois, Indiana, Ohio, and Kentucky. The company will add 300 trucks to its fleet by the end of 2010 to accommodate the additional business.

www.con-way.com/truckload	800-641-4747

Old Dominion Freight Line

Old Dominion Freight Line implemented a gateway into Alberta, Canada, through its Great Falls, Mont., location. The service connects 65 Old Dominion service centers and reduces border-crossing times.

www.odfl.com	336-889-5000

RAIL

Watco Transportation Services

Watco Transportation Services started a new railroad, the Boise Valley Railroad (BVRR), serving 84 current customers of Watco's Eastern Idaho Railroad, Great Northwest Railroad, and Yellowstone Valley Railroad. The railroad ships commodities including potatoes, lumber, fertilizer, and fuel. The BVRR's 11-mile Wilder Branch runs from Wilder to Caldwell, Idaho, and the 25-mile Boise Cut Off runs from Nampa to just southeast of Boise. The BVRR has also obtained trackage rights from the Union Pacific Railroad to serve the Nampa-to-Caldwell route.

www.watcocompanies.com	620-231-2230

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SOFTWARE

LeanLogistics

The latest release of *On-Demand TMS* includes new reporting and document loading functions, updated load rate uploads, and revised access permissions for the system's appointment scheduling capabilities.

www.leanlogistics.com 616-738-6400

Cheetah Software Systems

Cheetah's new *Customer Visibility* system integrates with *Cheetah Freight* and *Cheetah Delivery* solutions to provide real-time order status information.

www.cheetah.com 888-CHEETAH

FastPic Systems

FastPic5 inventory management and control software now offers a mobile device module to improve storage and retrieval efficiency, particularly in rack and shelving applications. The software optimizes the search and retrieval process, guiding the operator to the proper storage location by the most direct route, reducing search time.

www.fastpicsystems.com 207-591-3170

CargoSmart Limited

CargoSmart expanded its supply chain visibility reports to include exception management and EDI performance. The new reports help plan, process, and monitor multiple-carrier shipments and communicate in-depth, timely information to supply chain managers.

www.cargosmart.com 212-809-1245

TAKE Supply Chain

TAKE Supply Chain released an upgrade to the *Xtended Process Control* supply chain execution solution. The upgrade includes Web label tools for printing package tracking numbers and advance shipment notice labels; an engineering quality collaboration module that manages supplier deviation requests and corrective actions; and an expanded accounts payable module for creating credits and invoices.

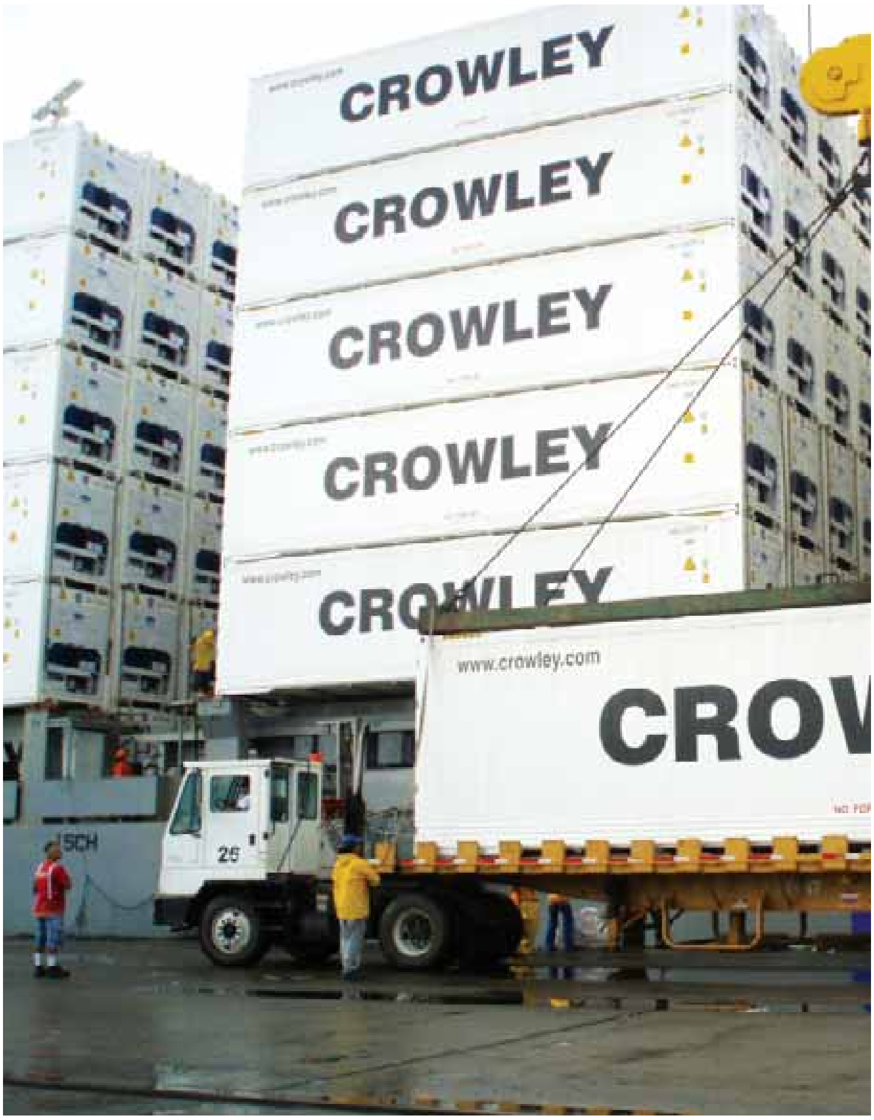
www.takesupplychain.com 800-324-5143

WEB

BDP International

The BDPSmart Vû customer service portal provides procurement and inbound logistics managers visibility into the purchase order process through real-time data, including products ordered/remaining volumes; case quantities; purchase order agreement changes, alerts, and exceptions; container utilization; and built-in confirmation of milestones configurable to each user's key performance indicators and operating procedures.

www.bdpinternational.com 610-247-2430



▲ OCEAN: Crowley

Crowley added 400 new 40-foot refrigerated containers to its Latin American fleet to serve the region's produce shippers. The Carrier PrimeLINE containers use 16 to 20 percent less energy than earlier models.

www.crowley.com 904-727-2438

CONTINUED FROM PAGE 274

3PLs

Geodis Wilson

Geodis Wilson announced plans for a new logistics center in Vejile, Denmark, to provide global freight forwarding, furniture logistics, air charter, and express shipping services. Located equidistant from the major industrial hubs of Aarhus and Odense, the new facility is scheduled to be completed in December 2010.

www.geodiswilson.com 732-362-0600

Wallenius Wilhelmsen Logistics (WWL)

WWL opened an office in St. Petersburg, Russia, to provide ocean, terminal, and technical services; inland transport; and supply chain management. The company expects to ship a wide variety of cargo including automotive, high, and heavy RoRo cargo; and static/break-bulk and project cargo.

www.2wglobal.com 201-307-1300

Werner Global Logistics Australia

A new subsidiary of Werner Enterprises, Werner Global Logistics Australia offers freight forwarding, logistics, local transportation, and distribution services to the domestic Australian market.

www.werner.com 800-228-2240

Damco

Damco, the logistics brand of A.P. Moller-Maersk Group, opened an office in Maputo, Mozambique, providing direct access to the industrialized regions in Sub-Saharan Africa and serving as an alternative to ports in Durban and Beira.

www.damco.com 718-425-1020

Eastern Connection

A new 12,000-square-foot facility in Norwood, Mass., allows for a more efficient delivery schedule by redirecting routes through southeastern Massachusetts, while a new warehouse in Philadelphia doubles Eastern Connection's warehousing capabilities.

www.easternconnection.com 800-877-4745

OCEAN

Mediterranean Shipping Company (MSC)

MSC added direct calls at the ports of Norfolk and Charleston to its Golden Gate Service (GGS), which originates in Shanghai and includes calls in Singapore, New York, Baltimore, and Colombo, with Suez Canal transit. MSC dropped the Port

CONTINUED FROM PAGE 276

of Savannah and Port Everglades from the GGS. Twelve vessels of 6,050-TEU capacity serve the route.

www.mscgva.ch 212-764-4800

Evergreen Line

Evergreen Line increased its eastern Mediterranean and Black Sea coverage by cooperating with Norasia Container Lines to schedule weekly sailings between the Far East and these regions.

www.evergreen-line.com 201-761-3000

WAREHOUSE EQUIPMENT

Rite-Hite

Created for warehouse environments requiring frequent washdowns, the FasTrax Clean door's specially designed upper track, side frames, and mold-resistant door fabric minimize areas where moisture can become trapped and mildew.

www.ritehite.com 800-456-0600

INTERMODAL

Fast Lane Transportation

Located off Interstate 15 in Adelanto, Calif., Fast Lane Transportation's new 80-acre intermodal cross-dock and equipment depot serves rail logistics providers, trucking companies, and equipment leasing businesses. The depot sits 30 miles north of the intermodal rail hub in San Bernadino and 100 miles northwest of the Los Angeles/Long Beach port complex. The three-terminal site offers 119,025 square feet of total dock area, 9,238 square feet of office space, and 75 acres of yard space.

www.fastlanetrans.com 562-435-3000

BNSF Railway Company

Spanning 185 acres, BNSF's expanded Memphis Intermodal Facility doubles the existing facility's capacity, reduces emissions, and improves air quality. The facility, which has capacity to handle one million lifts per year at full build out, is equipped with eight wide-span, electric, rail-mounted gantry cranes. The cranes produce zero emissions on site and reduce the number of hostler trucks needed to move containers within the yard. An automated gate system records images of containers, chassis, and tractors entering and exiting the facility to increase security while improving throughput. The system reduces truck idling time and emissions by 50 percent.

www.bnsf.com 800-795-2673

▲ **MATERIALS HANDLING: Sealed Air**

The Instapak Complete foam-in-bag packaging system produces foam tubes in a range of customizable sizes for cushioning, blocking, and bracing. The system reduces material usage and cuts parcel weight.

www.sealedair.com 201-791-7600

WhitePaperDigest

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.

Optricity

TITLE: ***Warehouse Slotting: Increase Performance Using the Five P's in Your Slotting Universe***

LENGTH: *15 pages*

DOWNLOAD: *www.optricity.com*

SUMMARY: Optricity's latest whitepaper focuses on the role of warehouse slotting, which is rich in data complexity and ripe for understanding how it can impact overall supply chain success. To illustrate effective slotting, the paper explores the Five P's: product, performance, people, pallet, and purchaser. The whitepaper ultimately defines how warehouses, which sit squarely at the juncture between suppliers and customers, can enhance performance and more efficiently meet expectations by balancing goals and constraints.

Exel

TITLE: ***Driving New Efficiencies in the Indirect Supply Chain: Procurement and Logistics Strategies for Maintenance, Repair and Operations (MRO) Supplies***

LENGTH: *10 pages*

DOWNLOAD: *www.exel.com/exel/exel_ind_inv_leadership.jsp*

SUMMARY: In challenging economic times, many companies focus cost-cutting efforts on direct materials and capital spending rather than Maintenance Repair and Operations (MRO) supplies, commonly known as indirect materials. Exel's new whitepaper presents an alternate concept that allows leading manufacturers to unbundle outsourced services and implement lean processes that create a high efficiency MRO outsource model. This new model offers greater visibility and promotes continuous improvement in every aspect of the indirect supply chain.

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**

Transite Technology

TITLE: ***Integrating Transportation Into Your Supply Chain***
LENGTH: *6 pages*
DOWNLOAD: *www.transite.com*
SUMMARY: The recent economic downturn resulted in a growing realization of how much money can be wasted if transportation expenses are not managed correctly. This whitepaper, produced by Transite Technology and two industry experts, offers advice and perspectives to companies seeking to more effectively integrate transportation into their supply chain practices.

Trifactor

TITLE: ***Recession Lessons: What We Would Do Differently If We Could Go Back to 2006***
LENGTH: *1 page*
DOWNLOAD: *www.trifactor.com*
SUMMARY: Business and the economy behave in cycles, like most environments. Therefore, prosperity will happen again. Knowing that good times lie ahead, we should do more than simply wish about what we should have done in the past. Instead, we can learn from our mistakes, recognize where we were complacent, and take action for the future. This whitepaper offers some lessons from the economic downturn, ideas that might ring true for your distribution operation moving forward, and insight on three essential parts of facility management: asset management, efficient systems and processes, and the potential to outsource non-core business tasks.

Ryder Supply Chain Solutions

TITLE: ***Optimizing DC Networks for Global Sourcing***
LENGTH: *9 pages*
DOWNLOAD: *www.ryder.com/lms_outsource.shtml*
SUMMARY: The competitive edge needed to be successful in an economy where the global supply chain grows more complex every day is flexibility in distribution center networks. Outsourcing DCs provides companies the flexibility to add new products, markets, sources of goods and capabilities while keeping their focus on their core business. To learn more about how outsourcing distribution centers offers more flexibility and less risk, download Ryder's whitepaper.

Management Dynamics

TITLE: ***NVOCC Profit Optimization***
LENGTH: *10 pages*
DOWNLOAD: *www.ManagementDynamics.com/NVOCC_ProfitOpt*
SUMMARY: Like all companies in the supply chain, logistics providers may be struggling to control buy-side costs and maintain target margins. In today's down economy, it is imperative that they not only retain current customers, but continue to grow through competitive wins. Odyssey Logistics & Technology Corporation is doing this using Management Dynamics' *International Transportation* solution, which allows the 3PL to centrally manage ocean service contracts. Odyssey has reaped significant benefits – including optimized carrier selection, differentiated service offerings, and reduced transportation costs—since implementing the solution. To learn more, download this whitepaper.

RESOURCE CENTER

INBOUND LOGISTICS WORKS FOR YOU!

3PLs

3PD Inc.
www.3pdelivery.com 866-373-7874
3PD Inc. helps you cut costs without compromising customer service and trim last-mile expenses without sacrificing delivery excellence.
AD PAGE: 13 PROFILE: 308

A&R Logistics Inc.
www.artransport.com 800-542-8058
A&R Logistics, an asset-based provider of bulk and van trucking, warehousing, and Web-based transportation solutions, has been servicing the bulk industry for 40 years and counting, providing shippers with best-in-class service at every level of the supply chain.
AD PAGE: 55 PROFILE: 309

Access America Transport
www.accessamericatransport.com 866-466-1671
Access America Transport is a third-party logistics company handling all modes of transportation including van, flatbed, refrigerated/frozen, and intermodal service.
AD PAGE: 101 PROFILE: 311

ADS Logistic Services
www.adslp.com 877-ADS-1330
ADS' state-of-the-art technology makes it an award-winning 3PL. Get acquainted with ADS' customized distribution and fulfillment services.
AD PAGE: 235 PROFILE: 312

AFN
www.thebestwayeveryday.com 866-7MOVE-IT
AFN offers logistics solutions to drive business forward. As your strategic partner, AFN keeps goods moving with customized solutions to meet your specific supply chain needs – every time.
AD PAGE: 261 PROFILE: 314

Almazo Line
www.almazoline.com 899-922-0663
Offering full-service customs brokerage and southern border logistics services, Almazo Line is a NAFTA partner you can depend on.
AD PAGE: 199 PROFILE: 316

Americold
www.americoldrealty.com 888-808-4877
Partner with Americold and grow with the leader in providing innovative, temperature-controlled distribution solutions.
AD PAGE: 233 PROFILE: 319

Aspen
www.aspenlogistics.com 800-741-7360
Looking for best-in-class logistics solutions? Aspen offers what you need. From warehousing to transportation to value-added services, Aspen can help.
AD PAGE: 277 PROFILE: 322

Bender Group
www.bendergroup.com 800-621-9402
Bender Group provides intelligent logistics solutions, including warehouse design, transportation, and consulting.
AD PAGE: 159 PROFILE: 323

Big Dog Group
www.bigdoggroup.com 866-745-5534
Worried that your logistics challenges are taking a bite out of profits? Let Big Dog Group's fully integrated global logistics services be the watchdog for your bottom line.
AD PAGE: 200 PROFILE: 324

Bilkays Express
www.bilkays.com 800-526-4006
Discover what Bilkays Express can do in the Northeast. Warehousing, inventory control, and the latest technology blended with transportation efficiency adds up to a winning combination.
AD PAGE: 145 PROFILE: 325

BNSF Logistics
www.bnsflogistics.com 877-853-4756
BNSF Logistics offers domestic and international services for shipments of any size, with expertise in all transportation modes.
AD PAGE: 19 PROFILE: 326

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For general questions about particular industry segments, use the card between pages 48-49 and 144-145.

For faster service, go online: inboundlogistics.com/rfp

Branch Warehouse Corporation
www.branchwarehouse.com 661-399-7391

Branch Warehouse supplies a variety of services customized to meet individual requirements. Its three facilities total more than 700,000 square feet of secure storage, and it offers both truck and rail services.

AD PAGE: 215 **PROFILE:** 327

Bulk Connection Inc.
www.bulkconnection.com 800-543-2855

Bulk Connection Inc. started in 1987 with the goal of providing efficient, high-quality bulk transportation services with competitive prices. Bulk Connection's transportation professionals are experts at moving your freight better than anyone else.

AD PAGE: 23 **PROFILE:** 328

C.H. Robinson Worldwide
www.chrobinson.com 800-323-7587

C.H. Robinson's Outsource Solutions let you add capacity, expertise, and TMS technology—with no new capital spending. It offers solutions for inbound and outbound transportation, mode or location management, managed TMS, or lead logistics, all directed at immediate and sustained savings.

AD PAGE: 5 **PROFILE:** 329

Cardinal Logistics Management
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*flex*Source
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Geodis Wilson
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Kane is Able
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AD PAGE: 237 **PROFILE:** 373

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AD PAGE: 99 **PROFILE:** 374

Kenco Logistic Services
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www.laufer.com 212-945-6000

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www.lesaint.com 877-KNOW-3PL

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AD PAGE: 263 **PROFILE:** 415

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AD PAGE: 203 **PROFILE:** 431

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AD PAGE: 157 **PROFILE:** 432

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AD PAGE: 165, 245 **PROFILE:** 441

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AD PAGE: 93 **PROFILE:** 443

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AD PAGE: 33 **PROFILE:** 448

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AD PAGE: 217 **PROFILE:** 349

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J.P. Morgan offers solutions that help manage your entire physical supply chain so you can deliver goods, materials, and a reliable financial performance.

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AD PAGE: 123 **PROFILE:** 398

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AD PAGE: 137 **PROFILE:** 347

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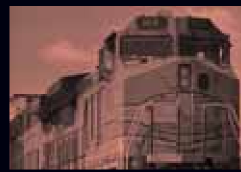

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