EXPANDED SPECIAL ISSUE

2008 LOGISTICS PLANNER

inbound logistics

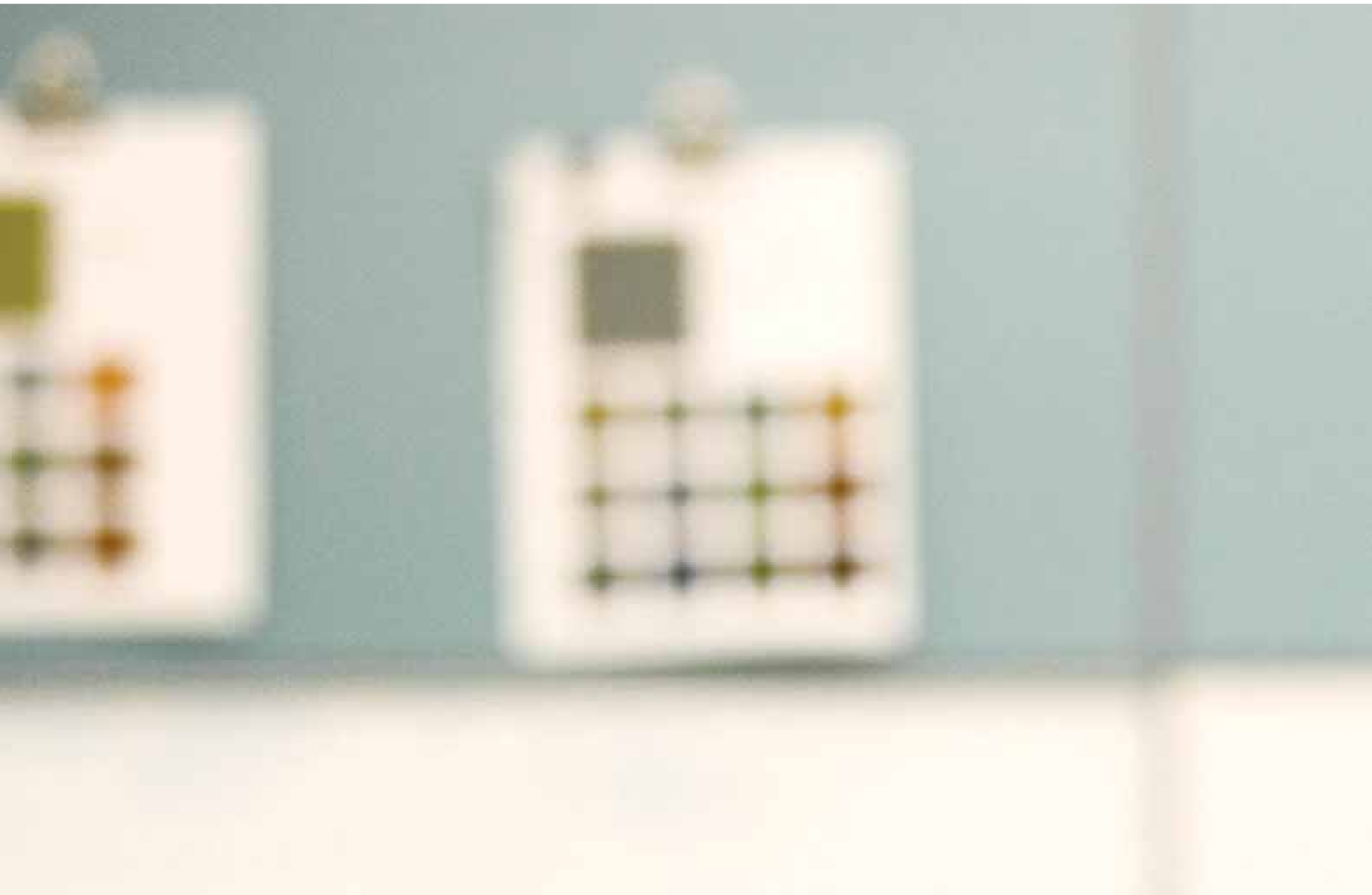
www.inboundlogistics.com

THE MAGAZINE FOR DEMAND-DRIVEN LOGISTICS • JANUARY 2008

THE EVOLUTION OF INBOUND LOGISTICS

Mapping a revolutionary concept from yesterday's legacies to tomorrow's visionaries.

New Breed clients in control: Boeing /// Dematic /// Hallmark /// Hamilton Sundstrand /// MetroPCS Wireless /// Motorola /// Pratt & Whitney



CONTROL FREAK

Supply chain operations are your company's lifeblood. You hesitate to outsource because you think it means losing sight of the details. New Breed understands your need for control. We bring you a steady stream of new ideas, systems that provide you with actionable information and visibility into operations, plus something new – the guts to share the risk. Call 1.866.463.9273 and learn how we sweat the details, just like you.

Supplier of the Year
Aerospace Support Category
The Boeing Company

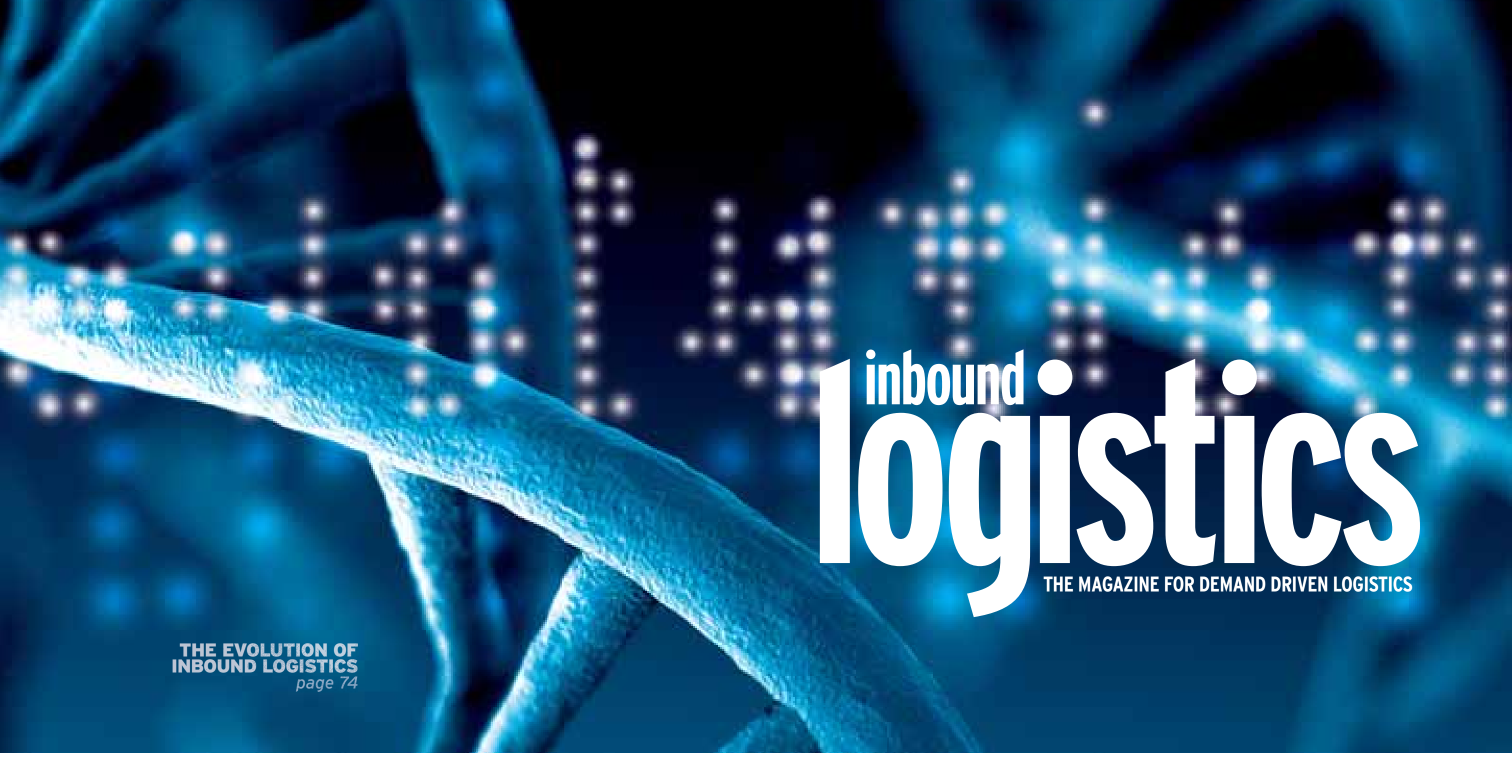
WAREHOUSING & DISTRIBUTION
MANUFACTURING SUPPORT
SERVICE PARTS LOGISTICS
REVERSE LOGISTICS & REPAIR
SUPPLY CHAIN CONSULTING

/// Siemens Medical Solutions /// Sikorsky /// Sonopia /// Sony Electronics /// US Marine Corps /// US Postal Service /// Verizon Wireless

NEW BREED LOGISTICS

1.866.463.9273 • info@newbreed.com • www.newbreed.com


WE HAVE
A STABLE OF
THOROUGHBREDS
READY TO RUN
FOR YOU.



THE EVOLUTION OF INBOUND LOGISTICS
page 74

January 2008 • Vol. 28 • No. 1

INSIGHT

10 CHECKING IN WITH THE PUBLISHER
The secret to bringing chaos to order, then order to chaos, lies in matching demand to supply.

12 CHECKING IN WITH THE EDITOR
The secret to building an orderly Logistics Planner lies in doing "more with more."

14 DIALOG
Readers talk back.

58 SUPPLY CHAIN SECURITY
Non-compliance with hazmat regulations costs businesses dearly.

60 VIEWPOINT
Inventory damage disputes can be avoided by employing best-practice storage and handling techniques.

64 CARRIERS CORNER
New technologies and solutions ensure that perishable inventory arrives in good condition.

68 ECODEV
DCs removed from metro areas may cure congestion woes.

70 IT MATTERS
Implementing food logistics software reduces risk in the event of a recall.

INPRACTICE

18 READER PROFILE Jamie Meadows: He's Got Your Back
As vice president of operations at Knoxville, Tenn.-based Golden Rule Medical, Jamie Meadows makes sure supply meets demand in the operating room.

245 CASEBOOK Message on a Bottle
New pedigree technologies help pharmaceutical manufacturers and sellers keep tabs on shipments and secure chains of custody.

251 LIT TOOLKIT The Educated Pallet: How Sweet It Is
Sugar Land, Texas-based Imperial Sugar sweetens its return on investment by leasing RFID-embedded pallets from iGPS.

255
DC SOLUTIONS
High-Speed Sortation Picks Up the Pace
The bells and whistles of innovative conveyor and sortation systems ring in marked cost and time savings at ATS crossdocks.


Motorola Supply Chain Solutions
YOUR SUPPLY CHAIN. ALL IN SYNC.
Here it is, your unbreakable Supply Chain. Every part completely visible from the moment an order is placed to the moment it's delivered to your customer. Know exactly what's happening as it happens and make changes on-the-fly like never before. It starts with the most complete supply chain technology solutions around, featuring versatile mobile computers and wireless networks. It's just another way Motorola puts Enterprise Mobility in the palm of your hand. HELLOMOTO™
Download our new Supply Chain white paper series at motorola.com/il1
MOTOROLA and the Stylized M Logo are registered in the US Patent & Trademark Office. All other product or service names are the property of their respective owners.
©Motorola, Inc. 2007. All rights reserved.

January 2008 • Vol. 28 • No. 1

INBRIEF

16 10 TIPS
How to safely ship hazardous materials.

20 TRENDS
Trucking looms large...Predictions for RFID's future...Building a supply chain playbook...Special Report: D.C. Confidential

39 GLOBAL LOGISTICS
European container ports handle increasing volumes... Logistics spurs growth in China... IT integration poses challenges... METRO Group rolls out RFID

258 NEW SERVICES

271 TECH UPDATE

281 WHITEPAPER DIGEST

290 TRADE SHOW EXPRESS

INDEPTH

74 The Evolution of Inbound Logistics
From Henry Ford's just-in-time assembly line and the Toyota Production System, to demand-driven early adopters, to current and future visionaries, the evolution of inbound logistics–in principle and in print–is timeless.

132 Dirty Jobs
Meet the unsung heroes behind the scenes who do the "dirty jobs"–moving freight, loading trucks, and stocking warehouses–to make sure you get what you need.

143 Ask the Experts
What can green do for you? How do you flatten supply chain bullwhips? Where should your company be looking to expand? C-level executives with more than 260 years of combined transportation and logistics industry experience answer these questions and more.

160 Premium Trucking: The Right Tools for the Right Job
Paying premium prices for premium trucking services can go a long way toward enhancing supply chain efficiency, improving customer service, and padding bottom-line growth.

172 Green is the New Black
Increasing pressure from government, consumer, and industry leaders make supply chain sustainability a core business goal. Understanding how green initiatives can reduce operating costs, create new revenue streams, and minimize carbon footprints is key to mass acceptance.

January 2008 • Vol. 28 • No. 1

INDEPTH

186 West Meets East
Building business partnerships in China means engaging people on their terms. Making a good first impression can go a long way toward securing long-term relationships.

199 Mexico Paves the Road to Prosperity
Free-trade agreements with more than 40 countries have helped Mexico develop the world's 12th-largest economy. But can the country handle its growth? Transportation infrastructure lies at the heart of Mexico's ambitious plans for the future.

211 Space Exploration: New Frontiers in Site Selection
An emerging crop of local, state, and provincial economic development groups and port facilities are committed to going to the ends of the earth – and then some – to showcase their sites.

221 Now Arriving: Airport Almanac
May we have your attention please. Now arriving at page 221: The answers to all your queries about the top six U.S. cargo airports.

235 3PLs & PLM: Returns on Investment
Consumer goods manufacturers are slowly learning that outsourcing product lifecycle functions to third-party logistics providers – from raw material procurement to recycling – can help reinforce supply chain management best practices.

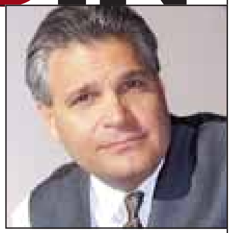
INFO

299 RESOURCE CENTER
328 CALENDAR
330 CLASSIFIED
495 PLANNER INDEX

WEST MEETS EAST
page 186

CHECKING IN

Keith Biondo



by Keith Biondo | **Publisher**

Bringing Chaos to Order

At the core of every enterprise–whether factory or store–lies chaos. Business logistics managers find and craft that chaos into an ordered system, driving the company's efficiency. Demand-driven logistics practitioners believe that even more disorder is waiting to be found. A deeper view into that newly ordered system reveals a tantalizing glimpse of still more variables that can be organized, *but only by matching demand to supply.*

Perhaps you are running a finely tuned and well-organized logistics system that is not completely matched to demand. Certainly you can master transportation and logistics without accepting the demand-driven philosophy. But is there a limit to how well transportation can be managed or a warehouse can be run? Does the cost of diesel, or the hours a truck can operate, or the amount of time people can work a warehouse become finite at some point?

Yes, it does. Cut too much out of your transport or warehousing costs and you'll rediscover the importance of total cost of logistics ownership. Demand-driven devotees believe their challenge can never be a near-zero sum game. They believe they can master the chaotic variables of their enterprise, up to a point, but their job won't be complete unless they understand and know the unknowable–future demand–and align their business process accordingly. They are providing logistics examples of what's termed Occam's Razor, developed by William of Occam, the 14th-century English logician. He postulated, "it is vain to do with more what can be done with less."

More of what? Where's the "vanity" in a well-run logistics system? Consider that if your system is not aligned to demand signals, then you must stock SKUs of products you can't sell, over-buy inventory, over-buy storage for that inventory, and use many more shipments than necessary to serve customers–depleting corporate resources and doing with more that which can be done with less.

But can you really run a logistics system with less? Perhaps not in all cases.

Consider this: When logisticians discover the chaos inside their well-ordered logistics system, they find opportunities where the logistics function may be used as a change agent. Internal and external logistics networks, which seize upon existing logistics management inertia, are formed. Functional silos come down, and closer cooperation among vendor, carrier, logistics partner, and customer create new value for all.

So if you sometimes get a vague, uneasy feeling that more can be done to improve your logistics operations, look a little deeper. Try to link demand more fluidly to supply. Do that, and the journey to bringing inner chaos to order begins. ■

inbound logistics

Vol. 28, No. 1 January 2008

THE MAGAZINE FOR DEMAND-DRIVEN LOGISTICS

www.inboundlogistics.com

Inbound Logistics welcomes comments and submissions. Contact us at 5 Penn Plaza, NY, NY 10001, (212) 629-1560, Fax (212) 629-1565, e-mail: editorial@inboundlogistics.com. For advertising, reprint, or subscription information, call (212) 629-1560, or e-mail publisher@inboundlogistics.com. Inbound Logistics is distributed without cost to those qualified in North America. Interested readers must complete and return the qualification card published in this issue, or may subscribe online at www.inboundlogistics.com/free. Subscription price to others: in North America: $95 per year. Foreign subscriptions: $129. Single copy price: No. Amer. $10, foreign $12, back issues $15. Periodicals postage paid at New York, NY, and additional mailing offices.

CHECKINGIN

Felecia Stratton

by Felecia Stratton | **Editor**

Bringing Order to Chaos

When building the annual Logistics Planner issue, William of Occam's "more with less" maxim is best left at the door. Each successive year that we produce this annual tome, we invariably do "more with more"–more commitment, more time, and even more fun. That the chaos of what we call "Planner season" manifests itself in an ordered presentation of articles and resources tailored to your business needs is remarkable, given the diversity and volume of information sources we tap into.

This issue's cover story, *The Evolution of Inbound Logistics (p. 74)*, comprises an historical overview of Henry Ford's just-in-time philosophy and the Toyota Production System, a timeline of inbound logistics' best practices, current case studies, and a look forward to where businesses are taking demand-driven logistics. This layered story gives shape to an idea–and our mission–that visionaries today continue to adapt and evolve, bringing more order to their sometimes chaotic supply chains.

Justifications for embracing demand-driven practices run the gamut from reducing inventory to increasing visibility. Moving forward, companies will need to do both–and more–as they tackle globalization, security, sustainability, cost, and capacity issues. To help you face the chaos of the coming year, *Inbound Logistics* invited C-level executives of leading logistics providers and carriers, with more than 260 years' worth of combined experience, to address important questions about today and tomorrow. You can tap their insight and advice in *Ask the Experts* (*p. 143*).

One challenge these experts speak to is the increasing pressure from industry, government, and consumer watchdogs to green the supply chain. Many businesses are still unsure of supply chain sustainability–what it entails, if it's important, and how they can get involved. Amy Roach Partridge's article, *Green Is the New Black* (*p. 172*), offers a detailed overview of pending legislation, industry stewardship, and examples of businesses that are making green initiatives sustainable from a bottom-line perspective.

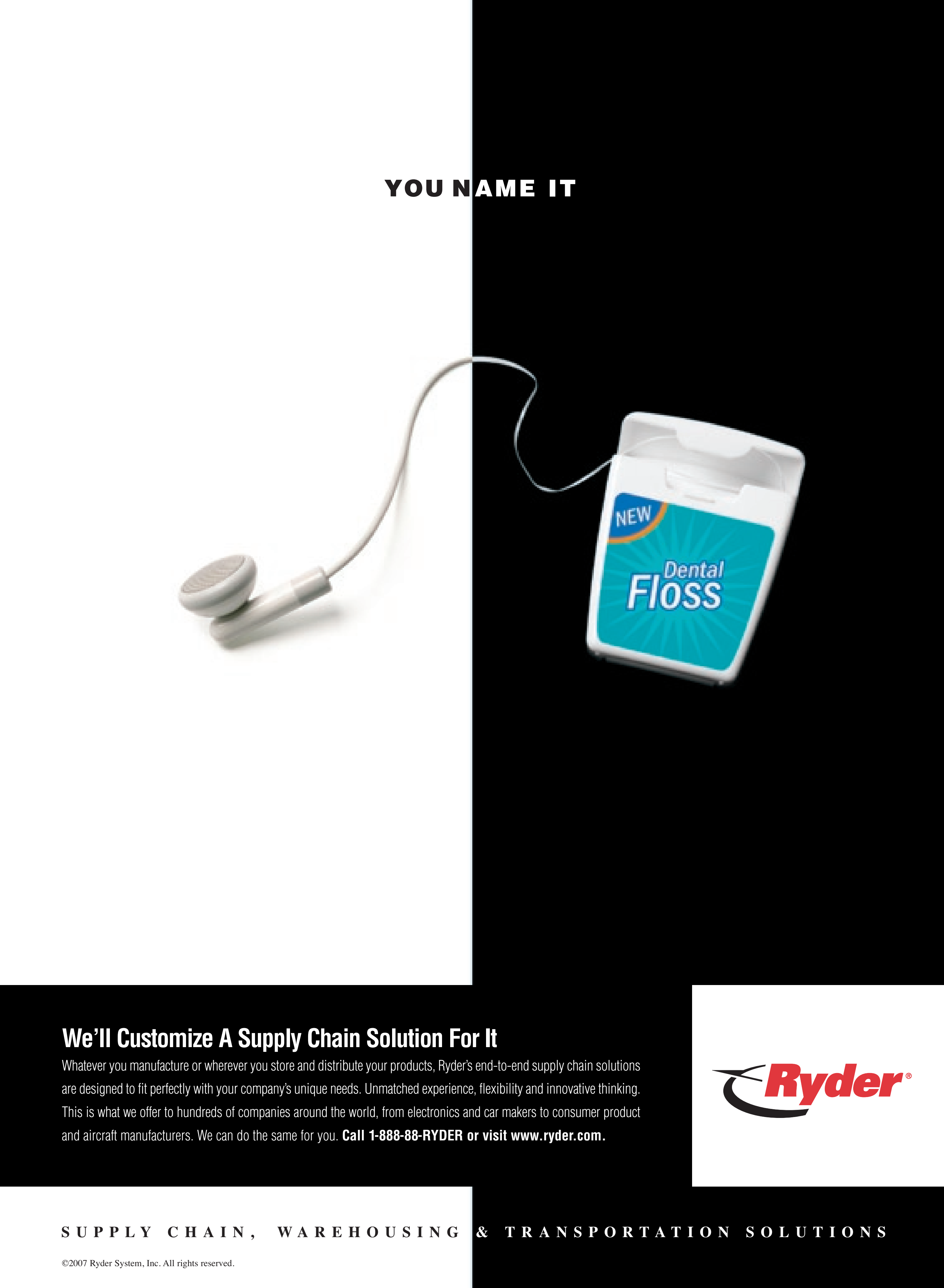
Given the continuing pace of globalization, logisticians and supply chain managers often find themselves more than a little "green" when it comes to acculturating with business partners in countries such as China. From a practical perspective, knowing the do's and don'ts of how to act and communicate with people is crucial to building collaborative and long-term relationships. Lisa Harrington distills important cultural relativities, while presenting insightful rules for better engagement, in her article *West Meets East* (*p. 186*).

Last, but surely not least, our annual Planner Profiles (*p. 335*) synthesize need-to-know information about today's logistics market leaders in a structured way that you can easily digest. Collectively, these profiles and articles serve as an important resource as you work your way through the year.

We hope you will use this issue as a tool to master the chaos of today's competitive environment while bringing more order to your enterprise. ■

Inbound Logistics (ISSN 0888-8493, USPS 703990) is published 12 times a year on the 15th of the month for 60,000 people who buy, specify, or recommend logistics, logistics technology, transportation and related services. Periodicals postage paid at New York, NY, and additional mailing offices.

POSTMASTER SEND ADDRESS CHANGES TO: Inbound Logistics • PO Box 1106 • Lowell, MA 01853-9821


YOU NAME IT
NEW
Dental
Floss
We'll Customize A Supply Chain Solution For It
Whatever you manufacture or wherever you store and distribute your products, Ryder's end-to-end supply chain solutions are designed to fit perfectly with your company's unique needs. Unmatched experience, flexibility and innovative thinking. This is what we offer to hundreds of companies around the world, from electronics and car makers to consumer product and aircraft manufacturers. We can do the same for you. Call 1-888-88-RYDER or visit www.ryder.com.
Ryder®
SUPPLY CHAIN, WAREHOUSING & TRANSPORTATION SOLUTIONS
©2007 Ryder System, Inc. All rights reserved.

DIALOG

LETTERS TO THE EDITOR

Credit Check

As a group of international business students we were reviewing your magazine and had a question. In the October issue we could not locate the cover photo credits. We are interested in knowing what port was featured in that photo.

Dyllan Gallant, via e-mail

Editor Replies: The photo on the cover of our October issue is the Port of Vancouver, British Columbia. The photographer is Klaas Lingbeek-van Kranen, who is located in The Netherlands (www.digitalrebel.nl/)

Tracking Totes

You ran a very good article on IBCs and ISOs by Gregory DL Morris (*Drum Beaters, October 2007*). Did any of your research deal with the ability to track returnable IBCs from vendor to customer? I was in the chemical/plastics distribution business for 35 years and one of the biggest problems with returnable totes was the ability to track them. For example, how many were outstanding? What customers had them? How many days was a tote with a customer? Steel totes and stainless steel totes are fairly expensive and are considered an asset, so it is important to have a handle on where they are.

Al Rossi, via e-mail

Gregory DL Morris Replies: As you might expect, the resources put into tracking and returning totes vary according to their value and complexity. The largest and most specialized containers do indeed represent a substantial investment by the shipper or distributor. Those commonly have a unique bar code identifying the shipper, consignee, and other important information. The carrier enters that code into its waybill.

In many cases, the tote travels a simple orbit from shipper to customer and back. The challenge in those cases is for the shipper and customer to communicate on how many containers the customer has and when the empties will be sent back. This becomes complicated when totes are reused rather than returned. Tracking then becomes a challenge as totes move among several carriers and users. Progress is being made to integrate unique shipper and carrier scanning and RFID technologies so that systems can cooperate in tracking totes. But the network is far from seamless.

Ironically, low-value IBCs and totes sometimes create the opposite problem. Customers try to send them back or reuse them when they are only intended for one use.

Past Due Diligence

Delivering specialized project cargo requires a great deal of due diligence and planning to make sure a movement happens without undue costs or delays.

Paying attention to detail comes with the business, so when reading *Inbound Logistics'* September 2007 article, *Specialized Carriers: And Now for Something Completely Different*, I felt compelled to clarify three points made by the author.

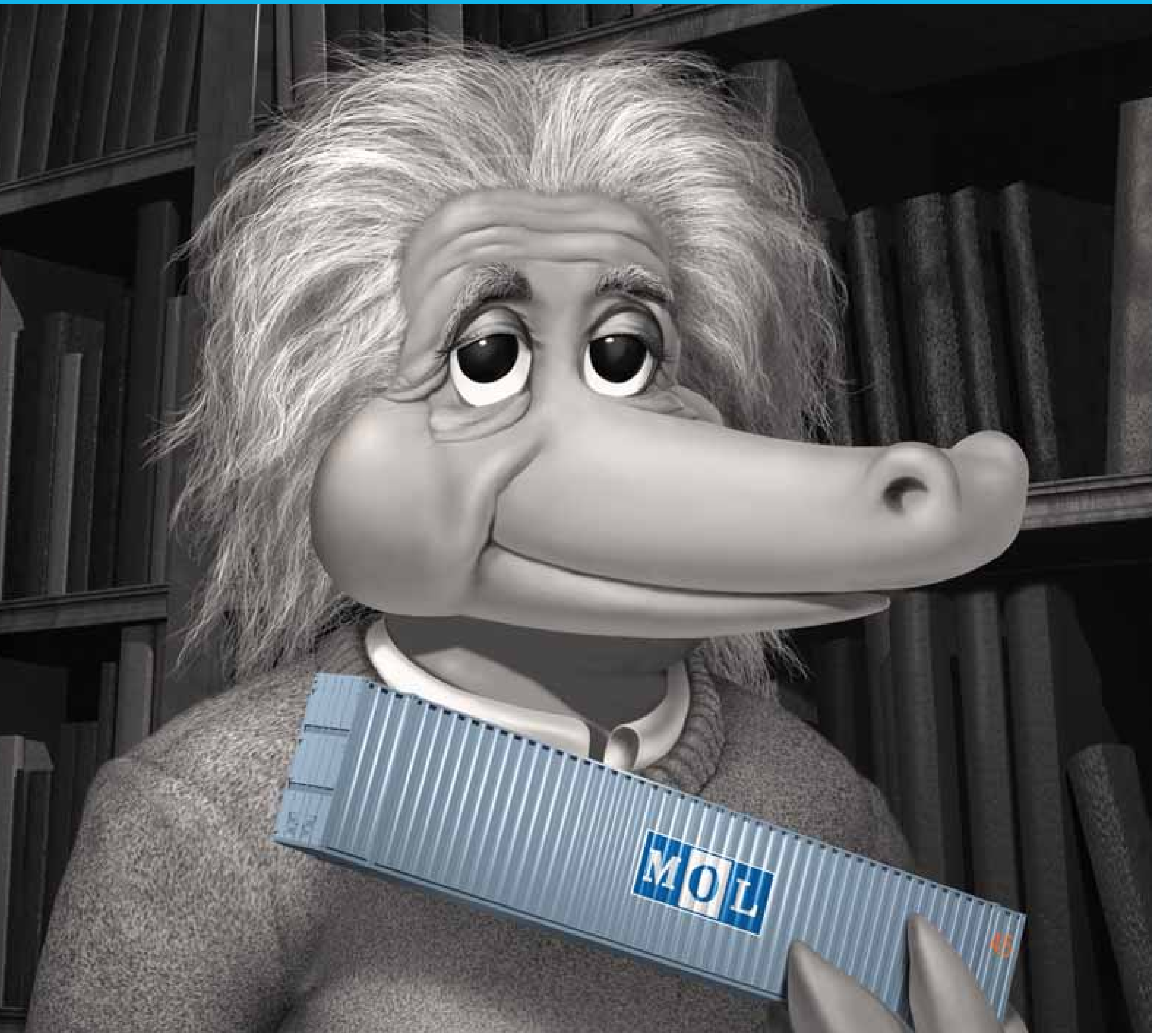
First, the 275,000-pound flue-gas scrubber tower transported by TransGroup was 88 feet in length, 43 feet in height, and 41 feet in width.

Second, the tower was transported to Astoria, New York.

Lastly, TransGroup Worldwide Logistics was formed in 1986 and has grown to produce revenues exceeding $200 million annually. TransProject, our Heavy Project Logistics division, was formed four years ago.

Shan Hoel, director of communications, TransGroup Worldwide Logistics

Transforming Time & Space



~~$E=MC^2$~~ $E = MOL$ The math is simple. MOL's reliability, flexibility and customer service establishes a new standard for global cargo transport.

By offering a wide-range of service options, MOL has the flexibility to respond quickly to global market forces in multiple locations and maintain the production and delivery schedules of increasingly complex, multi-sourced, supply chains.

Experience the difference. Call MOL today and discover that service *Excellence* is more than just a theory.

Learn how MOL's new contract viewer will save you time and money: www.MOLdelivers.com

MOL Delivers
www.MOLpower.com

Atlanta 678-855-7700 • Chicago 630-812-3700 • Edison 732-512-5200 • Long Beach 562-983-6200 • Seattle 206-444-6900 • 1(800) OK GATOR

10TIPS

STEP-BY-STEP SOLUTIONS

by Deborah Catalano Ruriani

Shipping Hazardous Materials Safely

Shipping hazardous materials requires more attention to detail than transporting regular goods. The changes in paperwork and procedures since Sept. 11 have further complicated an already convoluted process. The U.S. Department of Transportation (DOT) and the International Air Transport Association govern hazmat shipping at the federal and global levels, but transport buyers may encounter additional requirements issued by local agencies and individual carriers. Brad Cook, UPS director of dangerous goods, offers the following advice for moving temperamental cargo safely and efficiently.

1 **Classify before you try to ship.** The Occupational Safety and Health Administration (OSHA) requires the manufacturer of any product to develop a Material Safety Data Sheet (MSDS) identifying the material's physical properties and risks associated with exposure. Keeping accurate data on your shipment's contents eases the process.

2 **Understand your distribution environment.** Identify which transportation modes will deliver your products to their destination and determine the required regulatory steps.

3 **Know the regulations.** Complex requirements govern each transportation mode, and the rules may vary in different locations. Compliance is critical; getting it wrong can translate into heavy fines, undelivered products, or lost market-share opportunities.

4 **Package for protection.** Proper packaging is key to the safe transport of hazardous materials. Leaking hazmat packages can pose serious risks to the safety of transportation workers and to the environment. Using suitable containers, sufficient cushioning, absorbent materials, and secure closures will keep hazmat where it belongs – inside the package.

5 **Document everything.** Detailed paperwork describing the contents of your shipment helps ensure proper handling and movement throughout its journey. When in doubt, spell it out.

6 **Mark and label all shipments.** Let every involved party know, prior to actually handling the package, that the contents carry inherent risks if involved in a fire or accident. Remove all unrelated markings and labeling so that handlers only see relevant information.

7 **Invest in training.** Anyone associated with offering and transporting hazardous materials must be trained for job-specific responsibilities. Public seminars are available to teach shippers about hazardous materials regulations, but ultimately, employers are responsible for ensuring each worker's training and certification.

8 **Beware of changes to the rules.** In today's heightened state of security, the regulations associated with shipping hazardous materials constantly evolve. Get up-to-date information through your carrier, hazardous material supply vendors, industry organizations, or from the DOT's web site: www.phmsa.dot.gov.

9 **Know your carrier.** Many carriers have specific requirements and/or limitations regarding hazardous materials. Before offering a shipment for transportation, familiarize yourself with the carrier's rules, as well as its technology capabilities.

10 **Stay connected.** Establish clear communication with your carrier. If your product changes, disclose any discrepancies or variations from the norm. ■

READER

PROFILE

by Merrill Douglas

SPINE-TINGLING TALE

NAME: Jamie Meadows

TITLE: Vice president of operations, since 2005

COMPANY: Golden Rule Medical, Knoxville, Tenn.

PREVIOUS EXPERIENCE: Performed for three years as Smokey, the University of Tennessee mascot; logistics analyst, Con Agra Grocery Products; senior buyer, spare parts manager, shipping and receiving supervisor, BWXT Y-12.

EDUCATION: BA, Logistics and Transportation, University of Tennessee, 2002

He's Got Your Back

Jamie Meadows was still completing his college degree when he reported for a summer job at ConAgra Foods in Newport, Tenn. The plant was adding a new ketchup production line and needed some reorganization.

"The plant engineer called me into his office, threw a blueprint on the table, and said, 'Design our warehouse,'" Meadows says. So he designed it.

Meadows, a logistics and transportation major, then went on to redesign several more warehouse spaces to optimize product storage and movement. "That became my niche," he says.

Today, though, Meadows finds his niche not in ketchup, but in the delicate world of spinal surgery. Meadows is vice president of operations at Golden Rule Medical, a leading distributor for Zimmer Spine. Zimmer manufactures implants that bring relief to patients with spinal problems. Based in Knoxville, Tenn., Golden Rule sells its products in Indiana, Ohio, Kentucky, Tennessee, and North Carolina.

Working closely with Golden Rule's sales representatives, Meadows manages the company's inventory, forecasts demand, and makes sure that surgeons have the implants they need for every surgery.

That's a much different challenge than handling condiments, or even nuclear weapons components, as Meadows did while working for BWXT at the U.S. Department of Energy's Y-12 facility. "When you deal with a person's well-being, there's zero room for error," he says.

To make sure surgeons have the

The Big Questions

What do you do when you're not at work?
I love to spend time with my family. My wife and I are proud parents of nine-month-old twins, a boy and a girl, so we've got our hands full. I try to play golf when I have the chance. I'm intrigued by real estate investment, and I own investment property.

Ideal dinner companion?
It's a toss-up between Bill Gates, Warren Buffet, and Tiger Woods.

What's in your briefcase?
My laptop, a notebook, and a new barcode manual that I developed to help streamline our auditing processes.

Business motto?
There's zero room for error, and my responsibility is to make it happen.

If you didn't work in supply chain management, what would be your dream job?
Either Tiger Woods' caddy or Peyton Manning's backup.

materials they need, Golden Rule consigns inventory to hospitals, and some sales reps hold inventory as well. Meadows manages the consignment agreements. He also tracks current usage and historical trends to anticipate future needs.

For example, demand usually spikes toward the end of the year, as patients rush to schedule surgeries before their new insurance deductibles kick in.

To keep up with customers' near-term requirements, Meadows works closely with sales reps. "I receive surgery schedules from them weekly," he says. "Whenever new cases are added, they immediately send me the information so I can plan for future surgeries."

The more accurately Meadows anticipates demand, the less likely he'll be called upon late at night to jump in his car and drive for hours to hand-deliver a crucial implant for an unexpected surgery. But he has made those trips before, and he'll make them again, he says.

Meadows takes his company's name, and the philosophy behind it, to heart. "If I were lying on the operating table, I would hope somebody would put forth the extra effort to make sure things are right," he says.

With such a critical product, it's tempting to keep a lot of buffer stock. But while he's responsible to surgeons and patients, like any supply chain manager, Meadows also is responsible to corporate management.

"They watch our inventory turns and see what's moving and what's not," he says. "If inventory turns start slacking, then people knock on my door, and send e-mails asking, 'What's going on?'"

Apparently, those knocks on the door come rarely. Meadows, who has twice been awarded the title of "Operations Manager of the Year" from Zimmer Spine, says he has reduced inventory costs at Golden Rule by $4.3 million.

Balancing business interests and human imperatives makes for a tricky juggling act, Meadows concedes. "It's not like moving widgets. These implants affect somebody's parent or child. I always keep that in mind." ■

TRENDS

NEWS & EVENTS | SHAPING THE FUTURE OF LOGISTICS

by Joseph O'Reilly

Trucking Looms Large In Freight Forecast

Trucking will increase its share of the nation's freight pool and continue to dominate domestic freight movement into the next decade, according to the American Trucking Associations' (ATA) *U.S. Freight Transportation Forecast to 2018*.

Despite recent bumps in the road, the forecast, which reports on the present and future of the entire U.S. freight transportation industry, predicts growth for all modes, but an even greater role for trucking in moving and shaping the country's economy.

"We're an important part of the quality of life in this country," says ATA President and CEO Bill Graves. "The United States achieved economic greatness with the help of a state-of-the-art transportation system. And trucks will continue to lead the freight landscape."

The forecast projects trucking's total tonnage share to rise to 69.7 percent in 2012 and to 70 percent by 2018 from 69 percent in 2006. Above-average growth in key truck commodities and the inherent flexibility and on-time delivery associated with trucking is driving industry growth.

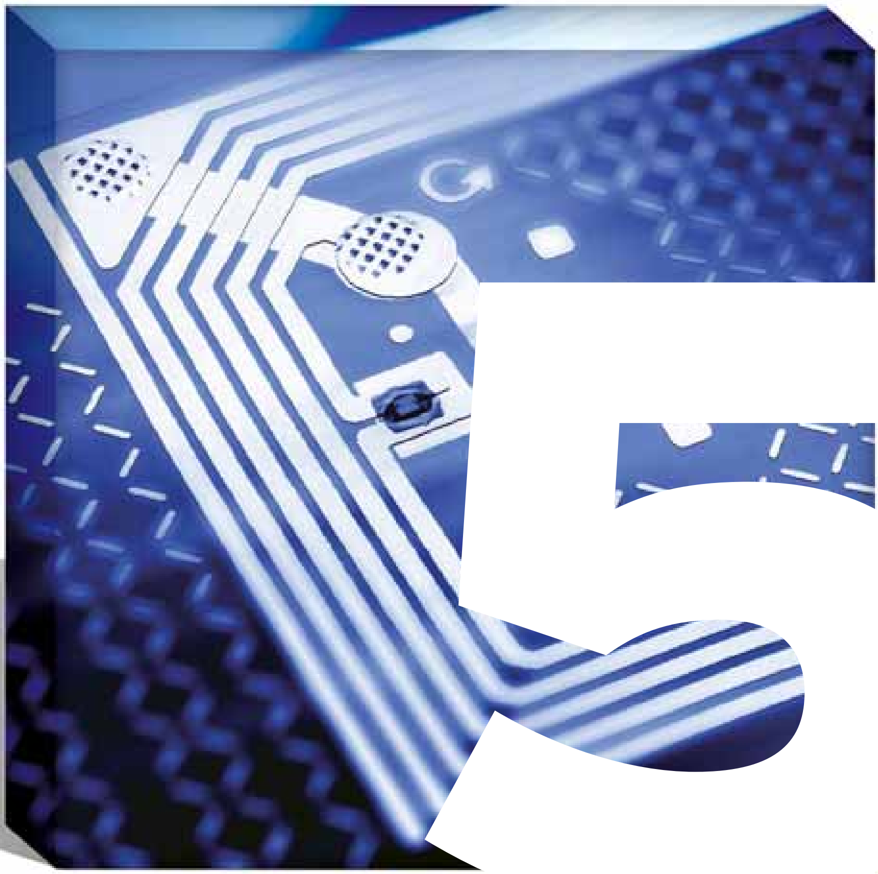
Although trucks will remain the largest mode of freight transport, other transport modes also are expected to carry more freight as overall tonnage in the United States increases.

The report predicts robust growth in rail/intermodal and air freight as well. These two modes represent the fastest-growing segments during the forecast period, although neither mode will have more than two percent of the total tonnage market by 2018.

Total rail tonnage (including carloads and intermodal units) will edge up to 14.7 percent of domestic tonnage in 2018 from 14.6 percent in 2006. Water passage tonnage, which accounted for 6.5 percent of the domestic transport market in 2006, is expected to expand by 1.6 percent a year, on average, over the next six years and 1.5 percent a year thereafter through 2018.

With future volumes tied to petroleum and natural gas demand, pipeline transport is expected to grow 1.6 percent per year, on average, between now and 2012, according to the forecast. Pipeline's share of total tonnage, however, will drop to 9.5 percent in 2012 from 9.8 percent in 2006.

CONTINUED FROM PAGE 20



RFID Predictions...Take Five

Is this the year radio frequency identification (RFID) floods the marketplace? Or will acceptance and application continue to trickle as industry tentatively tests the waters? Does it even matter?

The global industry for RFID technology is expected to grow rapidly before stabilizing and settling on a steady path, according to a recent study by Research and Markets. The Dublin, Ireland market research company predicts RFID spikes in countries such as the United States, United Kingdom, Japan, China, and Thailand and forecasts the market to grow at a moderate compound annual rate of 20.7 percent during the 2008 to 2016 period.

A recent study by ABI Research, a New York-based think tank, reveals a similar growth pattern–with the global RFID market expanding from a base of more than $3.8 billion in 2007 to $8.4 billion in 2012.

Within the RFID industry, a primary impetus for this growth has come from established applications such as security/access control, automobile immobilization, animal tracking, and toll collection. However, emerging application segments such as security-based solutions, contact-less payments, and supply chain management are in their last test stages, driving growth in new markets and presenting new opportunities.

"Given the recent amount of activity and anticipation surrounding RFID technology, one might be tempted to believe the RFID market has been experiencing explosive growth," says ABI Research Director Michael Liard. "But while uptake of full-scale RFID systems remains slower than many in the industry had hoped, steady growth continues. There is an overall sense of cautious optimism in the market."

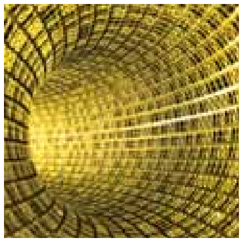
While few large RFID implementations have been announced, extensive pilot programs and closed-loop deployments are demonstrating the technology's value proposition and cost justification. For example, asset tracking in health care; work-in-process tracking in manufacturing; and visibility of returnable transport items such as pallets and containers provide significant return on investment and the opportunity to amortize the cost of transponders over several years.

What are the micro trends driving this rollercoaster RFID ride? AIM Global, an industry trade association for automatic identification and mobility solutions, shares five predictions that highlight important developments and innovations that are impacting the landscape of the RFID industry:

1 Consumers will see more innovative, practical RFID applications in familiar settings, such as sports, toy, and food safety. In 2007, the technology sector made a concerted effort well beyond the supply chain to extend the promise and benefits of RFID to consumers. Such innovative deployments are seen today in the sports, health care, toy manufacturing, and food processing sectors to guarantee product integrity and safety. For example, in the sports

Creating the future of logistics

Customers expect logistics service providers to add even greater value to their supply chains. Transfreight understands that … and engineers customized, lean solutions that fit each customer's business and operational objectives *exactly*.



Partnering with you
As a premier 3PL provider that's been helping top manufacturers connect their operations and supply chains since 1988, Transfreight reduces your total logistics cost. Real understanding of each unique situation, combined with integration of our technologies and processes with each customer's systems and operations, results in long-term partnerships. Our ever-expanding array of solutions includes:

- Network Rationalization & Optimization
- Crossdocking & Facility Services
- Transportation
- Packaging Design & Management
- Consulting

Your requirements are unique.
So are Transfreight's solutions.

Results you can expect
Our innovative, multidisciplinary team has improved supply chains for business leaders from around the world. Let us show you how we can help your business thrive.
Contact us today.

(888) 890-0400

3900 Olympic Blvd., Suite 100
Erlanger, KY 41018 USA
lean_logistics@transfreight.com
www.transfreight.com

USA / Canada / Mexico

TRANSFREIGHT®
Engineering Lean Supply Chains SM

CONTINUED FROM PAGE 22

UP THE CHAIN
PEOPLE ON THE MOVE

Warner Home Video, a division of the Warner Bros. Home Entertainment Group, promoted **Dan Miron** to executive vice president, worldwide supply chain management. Miron, who joined the company in 1991, will oversee Warner Home Video's global supply chain strategy and process, which includes mastering and pre-production, procurement of manufacturing and distribution services, and integrating new home entertainment business models into the existing supply chain. ■ **Altair Nanotechnologies Inc.**, a provider of advanced nanomaterials technology for use in energy, life sciences, and industrial applications, recently announced that **Terry Copeland, Ph.D.**, *(pictured)* has joined the company as vice president, operations for Altair Nanotechnologies' Power & Energy Group. Copeland will lead global operations and supply chain management for Altair Nanotechnologies' lithium titanate battery products. ■ **Aero Products International Inc.**, a temporary bedding manufacturer and maker of the original AeroBed, has announced **James Kopp** as senior vice president of global sourcing and U.S. operations. Kopp, who most recently served as president of RT Sourcing USA, will play an integral role in the development of Aero Products' strategic plans and tactical execution for global sourcing, vendor identification and management, inventory management, finished product distribution, product quality, and implementation engineering.

world, numerous companies now use RFID to authenticate sports memorabilia; speed skiers through lift lines at resorts; validate tickets at sporting events; and track marathon runners to ensure race time accuracy. With many recalls of contaminated foods and unsafe toys in 2007, RFID can enable firms to immediately track the origin of compromised food and toys, cease production of goods, and return products to manufacturers before harming consumers.

2 Expanded integration of RFID into mobile devices and other electronics products will provide consumers with new services and greater convenience. Handset manufacturers, network providers, search engine companies, and software providers increasingly view mobile devices and other consumer electronics products as important tools for interacting with, and providing services to, consumers and businesses. Consequently, consumers are now using multi-functional mobile devices to manage voice calls, email, text messages, multimedia, location-based information, personal finance accounts, and many other aspects of their personal lives. As RFID readers begin to be integrated into these mobile devices, a greater number of consumer-oriented applications will become available for business use. This will allow users to become more efficient in utilizing devices to interact with other technologies and service providers.

3 The convergence of RFID and other wireless technologies is inevitable. Today, individuals and organizations are more demanding than ever. Access to more granular information about the location, identification, movement, temperature, and security of products can provide convenience and value to exacting businesses, and in turn, to consumers. As a result, the ongoing convergence of RFID, GPS, sensor, and other wireless technologies will continue in 2008.

4 RFID technologies will continue to enhance homeland security initiatives. From transportation worker identification cards (TWIC), to border cards, to RFID-based e-Seals on cargo containers, RFID is currently being deployed in numerous ways to improve homeland security without hampering international trade. The ability to automatically identify transportation workers with a combination of biometrics and wireless authentication, as well as alert officials upon unauthorized openings of containers, are just two examples of how RFID can address current vulnerabilities in the global supply chain. e-Seals, which automatically locate containers, improve operational efficiency and ultimately reduce the overall cost of transporting goods.

5 RFID deployments will gain traction within "the first 100 feet" of the supply chain, as well as "the last 100 feet" of retail. International shippers and manufacturers are now focusing on item-level tagging of goods, as well as the tagging of containers at source factories, known as "the first 100 feet," because it is cost-efficient to do so, and provides enhanced end-to-end visibility. This strategy results in more effective management of goods, and manufacturing and shipping cost reductions. In addition, this approach enables product authentication at the beginning of the supply chain. It also facilitates detection of tampering, such as theft or terrorist intrusions to the container, at any point in the process – which typically involves 10 to 20 container "hand-offs" by different parties. In retail environments, commonly referred to as "the last 100 feet," consumers will see further penetration of RFID technologies in storefronts, as well as other applications that enhance the shopping experience. These innovations will further demonstrate the value of RFID throughout the entire retail supply chain by increasing sales and ensuring the availability and cross-selling of related items.

CONTINUED FROM PAGE 24

Supply Chain Xs and Os

When they line up to tackle supply chain management, global players face a multitude of challenges, including increasing transportation spend, labor issues, escalating energy costs, and changing customer requirements. So a little coaching never hurts.

Capgemini, Georgia Southern University, and the University of Tennessee have teamed up to put together the 16th-annual *Logistics Playbook*–a report on trends in logistics and transportation that polls more than 1,300 supply chain executives representing 14 industrial sectors.

The 2007 report lays out a game plan for businesses to follow based on market situations and company profile. It specifically focuses on three functions: sales and operations planning, distribution management, and transportation management. With 19.5 percent of companies reporting little integration of supply planning systems and 10.8 percent confirming transportation and distribution operate as separate functions, a little game time strategy can go a long way toward transforming supply chain pretenders into contenders.

The report indicates that an enterprise's playbook should account for a number of variables including size, financial performance, visibility into the supply chain, and strategy. However, there are four overarching plays that most companies should diagram:

1. Focus on understanding how your supply chain meets customer needs.

2. Focus on recruiting the best talent and providing them with access to real-time information.

3. Focus on working together with customers and suppliers on logistics. Participants suggest they spend 10 percent or less of their time collaborating with customers, suppliers, and other departments across the company.

4. Focus on a few key metrics.

"While leading firms have turned complexity into competitive advantage, many firms have made little progress over the past six years in integrating basic logistics processes," says Karl Manrodt, study co-author and associate professor of logistics at Georgia Southern University. "This is not a reflection of the lack of technology; to the contrary, software capabilities have improved greatly. What is missing is a holistic view of the firm's internal and external processes, and the ability to manage them."

Among other key findings:

- 29.2 percent of participants report they spent more than five percent of sales on domestic transportation.
- For all the different categories involved in strategic planning and operations information, more than 70 percent of respondents receive information in real time.
- In only 36.6 percent of the cases reported does a single manager control both transportation and distribution.
- 43.7 percent of all distribution volume is sent directly to the customer.
- The largest companies (those with $3 billion or more in annual sales) report having more integrated systems across all functions than medium-sized and small firms. ■

Who's In Charge?

Most firms have a traditional reporting structure: Production planning still reports to manufacturing. While sales forecasting is performed by sales and marketing, logistics and supply chain management's control of this area has nearly doubled in the last decade. Today, supply chain management controls two critical activities–demand management and network design/facility location.

	FUNCTIONAL CONTROL AREAS WITHIN THE ORGANIZATION					
SUPPLY CHAIN ACTIVITIES	PROCUREMENT	MANUFACTURING	SALES/ MARKETING	DISTRIBUTION/ TRANSPORTATION	SUPPLY CHAIN MANAGEMENT	OTHER*
Demand Management	12.1	9.8	23.2	8.6	**35.0**	11.4
Purchasing/Procurement	**65.1**	4.1	2.3	4.2	18.2	6.0
Network Design/Facility Location	2.7	8.3	4.4	20.9	**29.9**	33.7
Sales Forecasting	1.8	1.2	**77.0**	2.4	10.1	7.5
Production Planning	6.4	**46.4**	6.2	7.1	22.9	11.0

* Other includes Finance/Accounting • SOURCE: 2007 *Logistics Playbook*

SPECIAL REPORT:

D.C. CONFIDENTIAL

From tracking global containers to maintaining rail tracks, *Inbound Logistics* takes a closer look at recent legislative rumblings on Capitol Hill, industry causes and concerns, and what they portend for U.S. trade in 2008 and beyond.

PART 1 Rail's Inconvenient Truth

As the U.S. transportation industry looks for better ways to ease congestion on the nation's highways, improve infrastructure, and accommodate surging inbound container volumes from Asia, rationalizing freight movements between truck and rail modes presents a viable solution. But, at the moment, some shippers and carriers aren't looking at the problem in the same light. Captive rail freight users are calling for government control over the market, railroads and intermodal shippers are looking for tax incentives to free up capital and stimulate needed infrastructure development, and Congress is clogging up the legislative pipeline with proposals for reform.

In 2006, Trent Lott (R-Miss.) and Kent Conrad's (D-ND) introduction of the Freight Rail and Infrastructure Capacity and Expansion Act was widely applauded by the railroad industry as a much-needed fix for the future of U.S. freight movement. The legislation proposes offering a 25-percent tax credit for any business–shippers included–that invests in new rail equipment, tracks, intermodal facilities, or any other project that improves infrastructure. Support for the bill has been widespread among major global shippers such as Hewlett Packard, Michael Stores, Nike, Owens Corning, and Target. Port authorities, ocean carriers, and numerous shipper and carrier coalitions also back the bill.

So in 2007, when Jim Oberstar (D-Minn.) presented the Railroad Competition and Service Improvement Act (H.R. 2125) to Congress, a "pro-shipper" initiative directed at limiting the railroads' control over the market and increasing competition, a pitched battle ensued between captive rail shippers and the railroad industry at large. This current Congressional conundrum reflects a much deeper drama between two groups of rail freight users set against the backdrop of an industry headed in a new direction.

On one end, captive shippers long dependent on the railroads for moving product to market, are fighting for more government control over pricing and access to shared rail networks. One supporter of Oberstar's plan is Consumers United for Rail Equity (CURE), a group of rail customers including public utilities; farmers; chemical, ethanol, agriculture, cement and other manufacturers; and forest and paper companies. These types of shippers invariably transport bulk commodities that, due to size or characteristics, cannot be moved over the road–making them captive to existing rail services.

The Washington, D.C.-based lobby sees lack of competition in an

CONTINUED FROM PAGE 28

increasingly capacity-constrained rail system resulting in rising costs and deteriorating service for its members. This railroad monopoly, in their opinion further exacerbated by the U.S. Surface and Transportation Board's reluctance to embrace reform since the Staggers Act, continues to impede U.S. trade competitiveness domestically and abroad.

"While the major railroad companies log record profits and stock prices on Wall Street, delays in coal deliveries have caused higher electricity prices on Main Street. Skyrocketing transportation costs are forcing chemical and paper companies to consider moving American jobs overseas. Already a handful of utilities are importing coal from Columbia and Indonesia in order to meet consumer demand because the railroads are not delivering adequate supplies of U.S. coal," according to the coalition's position statement.

Currently, CURE is working to address two changes in legislation. First, the coalition supports initiatives that will improve the Surface Transportation Board, which it believes is failing in its mission to ensure competition and protect shippers from railroad monopolies. Second, CURE supports legislation that removes current railroad exemptions from the nation's antitrust laws–Oberstar's proposed H.R. 2125 bill included.

On the other side of the argument, railroad constituents led by the Association of American Railroads (AAR) are vehemently opposed to any lobbying for what they perceive as "re-regulation"– efforts they contend will take the railroad industry back in time and stifle ongoing efforts to increase capacity and create a broader footprint for domestic freight transportation.

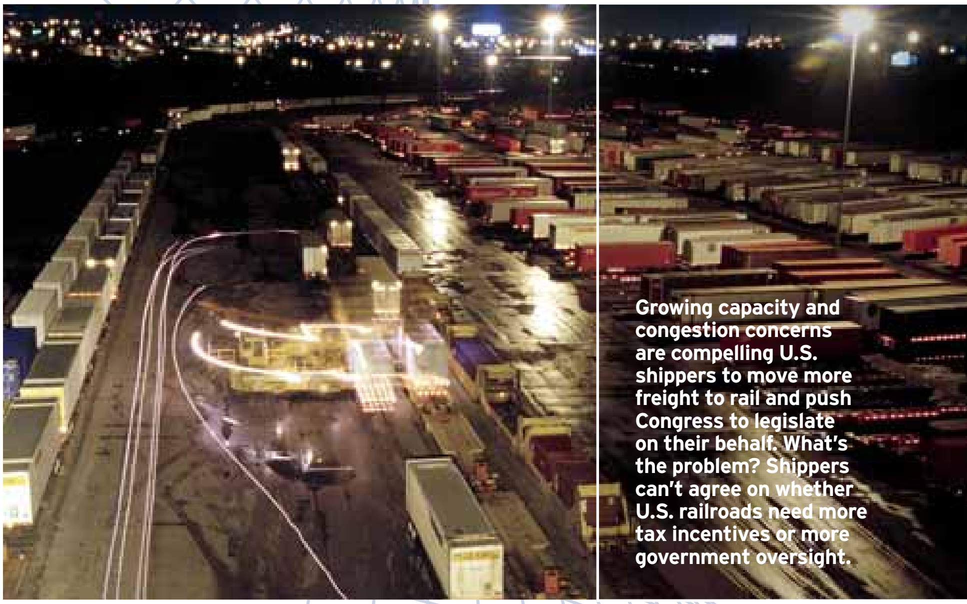
The AAR's cause has also attracted the attention of "global rail shippers," specifically those that are using intermodal to create capacity, reduce costs, and speed inventory turns in and around congested U.S. chokepoints. In an open letter to Oberstar this past spring, Ezra Finkin, director of government affairs for the Waterfront Coalition, an organization that represents retailers, suppliers, manufacturers, and agricultural producers moving product through U.S. ports, addressed some of these concerns.

"As users of the freight rail network, we are concerned that H.R. 2125 may needlessly and unfairly set rates and mandate service for only one segment of freight rail users at the expense of other customers. In order to meet the needs of all freight rail customers, we instead encourage your committee to consider policies to promote freight rail expansion that serve the interests of all users," writes Finkin.

He further argues that many intermodal shippers are already experiencing rising freight rates and declining service as a result of congestion and cargo delays. Instead, further tax incentives are needed for the industry to continue investing in railroad improvements–beyond the $9.4 billion that Class I's outlaid for such initiatives in 2007.

Herein lies a major sticking and sore point between U.S. bulk rail shippers and global intermodal users.

Captive rail shippers have long lamented the U.S. railroad industry's lack of attention and the fact it has dumped dividends in Wall Street and done little to reinvest in infrastructure, equipment, and services beyond status quo requirements–a railroad that these shippers helped build.



Growing capacity and congestion concerns are compelling U.S. shippers to move more freight to rail and push Congress to legislate on their behalf. What's the problem? Shippers can't agree on whether U.S. railroads need more tax incentives or more government oversight.

From their perspective, the industry's current predicament is one born of its own greed and inaction. While carriers are enjoying record profits, these rail customers are paying more and getting less. Now the railroads want more funding from government to invest in infrastructure largely benefiting intermodal shippers and not them – an inconvenient truth if there ever was one.

Despite this reality, railroads are changing. The challenges of the marketplace are driving railroads to enhance their service offerings and capabilities beyond what they have previously offered to core customers. Growing pressure for more intermodal options has necessarily forced sweeping change within the industry as carriers evolve their service and technology capabilities to compete with the trucking industry for capacity.

As the United States becomes more consumer-oriented and less industrially based, the railroads' captive audience is changing–traditional rail shippers, confined by mode, are

CONTINUED FROM PAGE 30

In 2007, U.S. Class I railroads invested $9.4 billion in various initiatives designed to increase capacity, improve rail customer service, and expand existing track and equipment, according to the Association of American Railroads.

now competing against intermodal shippers liberated by mode–and they are both vying for rail infrastructure investments. As a result of these capacity and cost constraints, new rail/intermodal shippers are testing the tracks and the railroad industry is evolving to meet their demands.

There seems to be little room for compromise between these separate interests. But in reality there is, and CURE has laid down a challenge to Congress and the railroads.

When the Freight Rail and Infrastructure Capacity and Expansion Act (ITC) was introduced to Congress, CURE encouraged its members to support such a bill–with one caveat: "Please contact your senators and urge them to support the ITC legislation only if provisions are added that address rail customer concerns."

All interests should supprt providing tax credits to railroads and rail shippers as long as credits are mandated to ensure that freed capital is then proportionally specified for both intermodal and railroad improvements. If such amendments are made, regulation is unnecessary; if not, some shippers might feel Oberstar's proposal bears consideration.

Even Oberstar, who has proposed this new legislation and lobbied heavily in favor of captive rail shippers such as the U.S. lumber industry, recognizes that the demands of the U.S. economy require a new, intermodal approach to ensuring future growth. In an Oct. 21, 2007, op-ed in the *Duluth News Tribune*, he painted a bucolic picture of how Americans might see this intermodal future: "Pulling out of the station, they will pass a busy sea port where goods are being loaded on ships bound for destinations all over the world. The train will roll past a great freeway carrying goods and people all the way to Texas. They will be using a transportation system that reflects the greatness of America's innovative spirit," he wrote.

> "While the major railroad companies log **record profits on Wall Street**, delays in coal deliveries have caused higher electricity prices on Main Street."
>
> **– Consumers United for Rail Equity,** *a coalition of freight rail customers that lobbies for legislative reform*

For the time being, however, America's innovative spirit is mired in a dogfight on Capitol Hill–and its outcome will likely rest on whether or not the railroad industry can work together.

The railroads do not want to damage their relationships with shippers that have largely funded operations and infrastructure over the past 100 years–and investment in intermodal over the past 35 years. And captive shippers recognize the challenges that smart railroad managers face, and are loathe to limit investment or push for re-regulation as long as their needs are fairly met.

Alternatively, if both sides cannot find a suitable compromise, government might be forced to turn back the clock as it addresses the railroads' future.

Where do you stand on theses two pieces of rail legislation currently circulating in Congress? Is re-regulation necessary? Email: editor@inboundlogistics.com

CONTINUED FROM PAGE 32

Veritainer Corporation's VeriSpreader solution, a crane-mounted device that scans containers in for radiation in real time, has been successfully piloted at the Port of Oakland and may soon be used at global ports.

PART 2 H.R. 1: Smoke and Mirrors or Smoking Gun?

When President Bush signed into law the Implementing the 9/11 Commission Recommendations Act of 2007 (H.R.1) this past summer, it expanded provisions set forth in the 2006 SAFE Port Act by requiring "100 percent" scanning of all foreign cargo containers shipped to the United States by July 1, 2012. It also provoked its share of skepticism.

Some U.S. industry voices have questioned whether this five-year plan is realistic or merely a symbolic response from Congress. Other foreign governments, ports, and business interests readily expressed concerns about how they will bankroll security infrastructure projects and why standards and protocol are only being legislated abroad and not in the United States.

As a result of these reactions, the feasibility of ensuring that world ports are compliant with the H.R. 1 specifications still remains uncertain. To be sure, U.S. businesses sourcing from and selling to global markets have a considerable stake in ensuring the safe and efficient flow of goods. But many stateside consignees and shippers are wary about making any significant investment in GPS tracking technologies, scanning equipment, and electronic security devices that have yet to be standardized.

Also, U.S. government attempts to roll out security measures at U.S. ports – such as the Transportation Worker Identification Credential (TWIC) program – have been slow at best. Consequently, businesses have little incentive to begin subsidizing security projects at ports abroad. Any progression from the status quo will likely take some time, and conceivably, additional prodding from public interests. Until government can convince the private sector that such investments are not only good for securing global transportation, but good for business as well, acceptance and adoption will remain sluggish.

Still, for all the scuttlebutt and debate, recent rumblings suggest some companies and government authorities are beginning to take stock of the situation and make progress toward, at the very least, testing container equipment and scanning technology that have global potential. At the same time, these enterprises are making a business case for companies towing the ROI line.

Schenker AG, for example, recently

CONTINUED FROM PAGE 34

completed a pilot phase for monitoring visibility of its Schenker smartbox containers between Hamburg and Hong Kong. Using special sensors to complement RFID technology, the Essen, Germany-based integrated logistics service provider can monitor current GPS coordinates, temperature levels, and security parameters of containers in transit.

RFID status notifications communicate the most important points where liability changes hands, as well as the time when containers arrive at a terminal. This gives a clear view of when and where the load is being transshipped.

This application of cargo security technology also drives shipment visibility and creates actionable information that can streamline transportation processes as well as rationalize costs. With Schenker's new containers, shippers can continuously monitor the temperature of sensitive goods, which could prove less expensive than transporting them in refrigerated containers in the long term.

As part of the Secure Freight Initiative, the Department of Homeland Security is currently working with ports in the UK, Pakistan, and Honduras to install scanning systems that can transmit data back to U.S. Customs for analysis.

Elsewhere on the global radar, a recent partnership between QinetiQ North America (QNA) and VeriTainer Corporation aims to bring greater transparency to global ports via new radiation scanning capabilities. The VeriSpreader solution, a crane-mounted device that scans containers for dangerous radiation in real time as they are being loaded and unloaded from container ships, facilitates higher security levels and efficient container movement. Complementing VeriTainer's solution, QNA's systems engineering and data analysis capability helps deliver leading-edge scanning technology.

Their collaborative effort offers one of the first actionable solutions to address the significant challenges presented by integrating scanning into transshipment and on-dock rail operations. VeriTainer's crane-based solution eliminates the long dwell time between entry and scanning at many U.S. ports. The company has demonstrated the efficiency of this technology with its own pilot projects, including "The Oakland Test Program," which successfully scanned more than 20,000 containers as they entered the Port of Oakland–without disruption to operations.

"VeriTainer has proven that its crane-based detection system works. We believe it accomplishes primary scanning in the most accurate and efficient way because the lift period offers a long dwell time for the sensors to read the cargo container," says Rob Topping, QNA president and COO.

"Combining VeriTainer's technology with our ability to deliver solutions to port and Homeland Security customers is an important part of our strategy to employ innovative, best-in-class technologies, both from inside QinetiQ and from our partners," he adds.

While the technology and equipment have only been tested stateside, both parties expect to expand their reach to global ports.

Finally, as private sector interests around the world begin making progress toward developing next-generation cargo security technologies, the U.S. government is testing the feasibility of the SAFE Port Act's "100 percent scanning" provision at ports in the United Kingdom, Pakistan, and Honduras with its Secure Freight Initiative.

Southampton Container Terminals in Britain, Port Qasim in Pakistan, and Puerto Cortez in Honduras are working in collaboration with the Department of Homeland Security and the Department of Energy's National Nuclear Security Administration to install scanning systems and a communications infrastructure to transmit scanning data back to U.S. Customs and Border Protection's national targeting center for analysis.

Moving forward, the U.S. government intends to include other ports in Southeast Asia in the pilot phase, as well as boost diplomatic outreach to assuage foreign government concerns about the initiative.

Arguably though, government should be paying equal attention to stateside interests – gathering their input and providing them with more incentive to consider investments in cargo security technology and strategy. Inevitably, U.S. businesses will be paying for it one way or the other–for better or for worse. ■

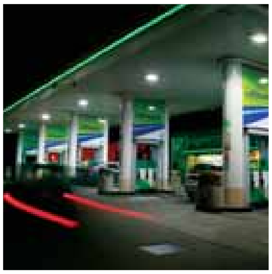
ORTEC

How does a **logistic cost reduction of 15%** fit into your **green initiatives?**

Live Customer Benefits Include:

- Reduction in miles driven by 25%
- Increased productivity by 4%
- Reduced paper flows
- Increased driver utilization by 50%
- Increased dropsize or reduced number of deliveries
- Reduced number of stock-outs

Providing logistics optimization solutions to industry leaders since 1981


Oil, Gas and Chemicals


Trade, Transport and Logistics


Consumer Packaged Goods

SOFTWARE™ SAP PARTNER

POWERED BY SAP NetWeaver®

Our solutions include:

- Pallet and Load Building
- Vehicle Routing and Dispatch
- Warehouse Control and Picking
- Production and Project Planning
- Service Planning
- Workforce Scheduling
- Demand Forecasting and Order Generation
- Merchandiser Planning
- Logistics Consulting

ORTEC Six Concourse Parkway, Suite 1930, Atlanta, GA 30328 • 678-392-3100 • www.ortec.com

PROFESSIONALS IN PLANNING

GLOBAL LOGISTICS

by Joseph O'Reilly

European Container Ports Primed for Growth

On the strength of surging Asia-Europe container trade and the strong valuation of the euro, leading North European ports are reporting strong throughput growth for 2007, with annual double-digit percentage increases very much the norm.

Even the region's largest gateway – the Port of Rotterdam in the Netherlands, where box terminal and overall capacity is under considerable pressure and set to remain so for the near term – notched a 12-percent improvement to pass the 10-million TEU mark for the first time, exceeding its own expectations by some margin.

In fact, at the beginning of 2007, Port of Rotterdam CEO Hans Smits predicted growth for the year only slightly ahead of the four percent achieved in 2006.

"In 2007, container throughput will be limited again physically, so that growth of around six percent is realistic," he stated then.

Commenting recently on prospects for 2008, Smits confirmed that port terminal capacity would remain an issue for Rotterdam but struck a more optimistic note regarding likely cargo throughput growth this year.

"We are balancing on the pivot point, particularly in the oil, container, and other dry bulk sectors and in hinterland transport," he said. "Although these businesses appear to be skilled tightrope walkers, we still have a few more years to go before we are in the clear."

Prospects for the Port of Rotterdam, however, remain positive. Smits expects the investment boom will continue and in 2008 throughput will increase by four percent to at least 462 million tons. Within this framework, container throughput will grow by approximately 10 percent.

Meanwhile, Northern Europe's other container ports are recording similar surges in container volume. Antwerp,

European ports are reporting annual double-digit growth in container volume, as a result of steady Asian trade and a strong currency .

CONTINUED FROM PAGE 39

for example, recently reported 16-percent growth in 2007 – double its 2006 figure of eight percent – to push its annual traffic to more than eight million TEUs. Its neighbor, the Belgian port of Zeebrugge, notched a 24-percent jump to more than two million TEUs.

Latest available statistics published by the French Port of Le Havre for the 11 months up to December, show container traffic more than 25 percent ahead of last year at 2.4 million TEUs.

Asia-Europe container trade is expected to surpass 35 million TEUs by 2016, according to recent data from Drewry Shipping Consultants.

Hamburg's 2007 half-year figure was more than 14 percent ahead at 4.8 million TEUs, putting it well on course to substantially exceed the 2006 total of 8.86 million TEUs. Meanwhile, Bremen/Bremerhaven's throughput figure for the first nine months of 2007 was 10.5 percent ahead of last year at slightly more than 3.6 million TEUs.

With Asia-Europe container trade expected to hit 35 million TEUs by 2016, according to Drewry Shipping Consultants, Northern European ports are primed for even more growth over the next few years.

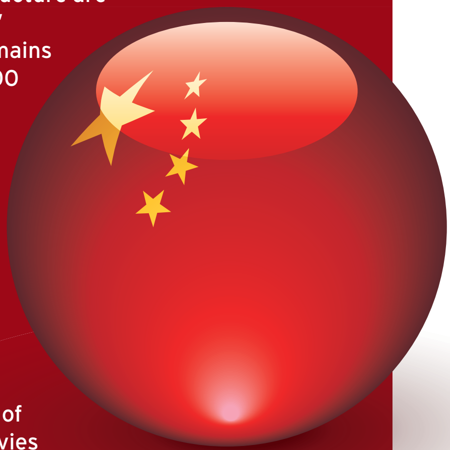
Government Drives China's Economic Engine

Owing to the boom in its economy and the influx of foreign direct investment, China witnessed a surge in demand for logistics services in 2006, evidenced by robust market growth. The Chinese government's deregulation of foreign-owned logistics companies has boosted opportunities for these companies to penetrate the market further.

As a result, the Chinese logistics market generated revenues of $7.38 trillion in 2006 and is estimated to reach $28.78 trillion in 2013, reports Frost & Sullivan's *Strategic Analysis of the Chinese Logistics Market*.

At the completion of the Chinese government's 10th five-year plan on transportation infrastructure in 2005, its railway length had reached 47,600 miles, while highways eclipsed the one-million-mile mark. Besides government initiatives, the evolution of the logistics and supply chain industry within China has augmented its trade competitiveness as well as its own economic reckoning.

"Improvements to logistics infrastructure such as integrating road and rail networks, constructing airports in second- and third-tier cities, and setting up free trade zones are expected to create better connectivity to link ports and airports," notes Frost & Sullivan Research Analyst, Amelia Wong. "The improving IT integration of local 3PL service providers and the ongoing development in transportation infrastructure are expected to aid the growth in this market."



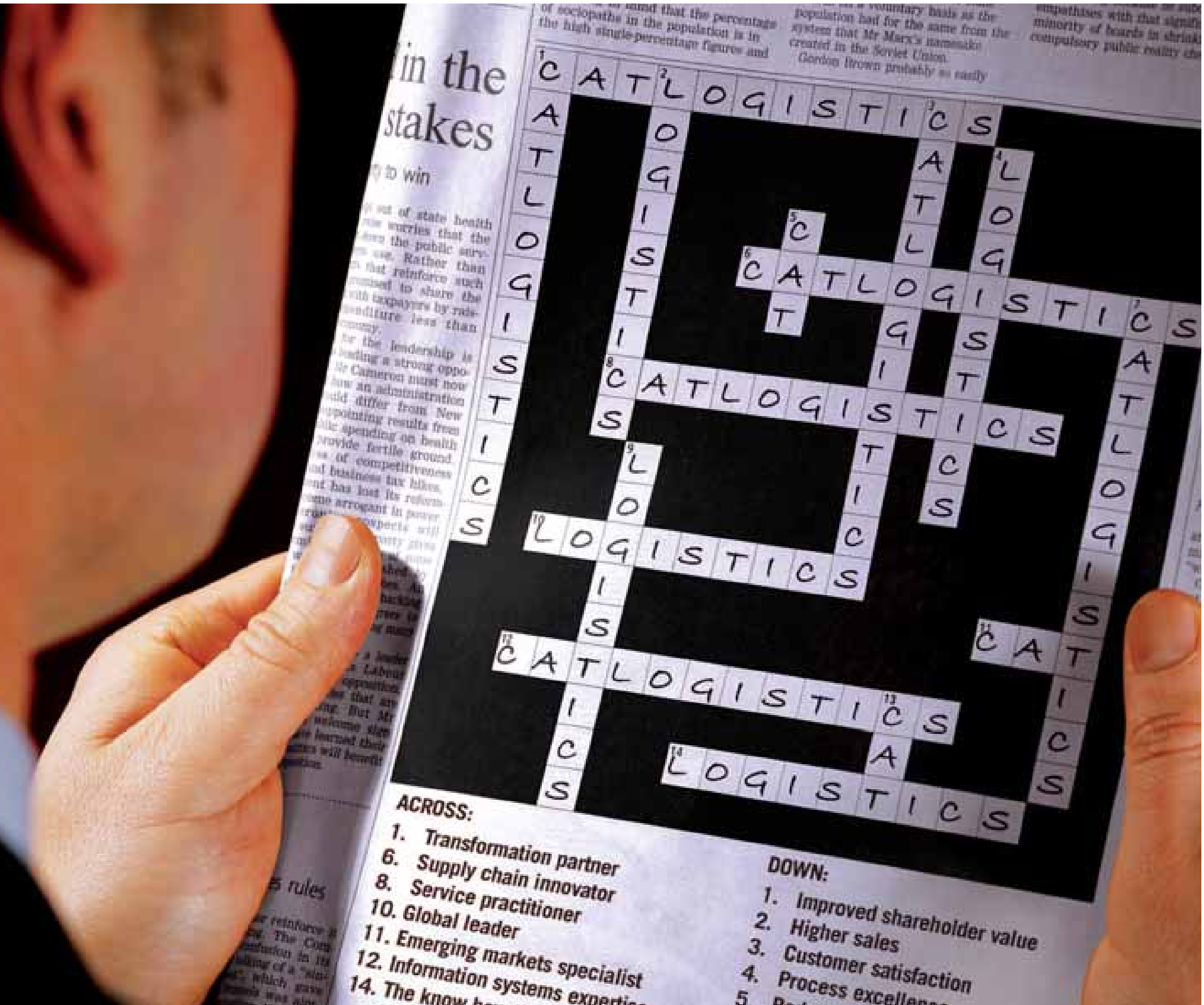
Still, challenges abound. The market remains highly fragmented, with more than 300,000 registered logistics companies, many of which have transitioned from local transportation and warehousing companies. Complex licensing processes at the national, regional, and local levels of government; bureaucracy; and regional protectionism are also impeding market growth.

Consequently, moving goods among provinces continues to challenge foreign logistics service providers. To the benefit of local governments but the detriment of shippers, each level of state bureacracy levies toll fees on vehicles from outside the province, favoring companies that use locally based logistics service providers. Therefore, unnecessary unloading and loading cause delays and add to excessive costs.

"Logistics service providers are urged to streamline operations and reengineer management methodology with active technology deployment," adds Wong. "With higher operational efficiencies and cost reductions, service providers can offer more competitive prices."

Although service providers are expected to compete on price, prompt delivery, and service quality, they must develop customer-focused solutions and pricing for various services, instead of quoting a common price to all companies.

Logistics service providers can also benefit by establishing a long-term relationship with the public sector, including city transport authorities as well as the central government.



CLUED UP DECISION MAKERS CHOOSE CAT LOGISTICS.

Let us take the guesswork out of optimizing your supply chain performance. Many of the world's biggest companies have chosen Cat Logistics as a trusted supply chain partner. We have a proven track record of delivering fast and reliable solutions to improve revenue, lower overall costs and optimize asset utilization.

To see how a partnership with Cat Logistics can enhance your business performance contact us at: **www.CatLogistics.com** | **CatLogistics@cat.com**

CAT® Logistics

CONTINUED FROM PAGE 40

Global Air Cargo Shaken, Not Stirred

Record-high fuel prices, the spillover of economic problems in the United States, and an apparent modal shift of some air shipments to ocean kept the air cargo industry on edge throughout the year, according to the Air Cargo Management Group's (ACMG) recent report, *International Air Freight & Express Industry Performance Analysis 2007.*

The study found last year to be one of significant change within the international airfreight and express industry. Despite their problems, traffic levels in the airfreight and express sectors grew in the mid-single-digit range–only slightly less than the historical average growth rate.

"Given uncertainty in the market, ACMG believes the growth rate for 2008 will be similar to last year – in the four-percent to five-percent range," says Robert Dahl, ACMG Project Director. "That figure is slightly less than our long-term forecast of six percent annual growth."

Combined annual revenue for international air cargo participants – airlines, forwarders, and express companies – now exceeds $78 billion. The revenue total was pushed up by traffic growth, higher fuel surcharges, and currency exchange rate trends.

"Key indicators to watch for in 2008 include the degree to which consolidation continues in the airline, freight forwarding, and express sectors, and signs of overcapacity based on the record number of wide-body freighters on order by the world's airlines," adds Dahl.

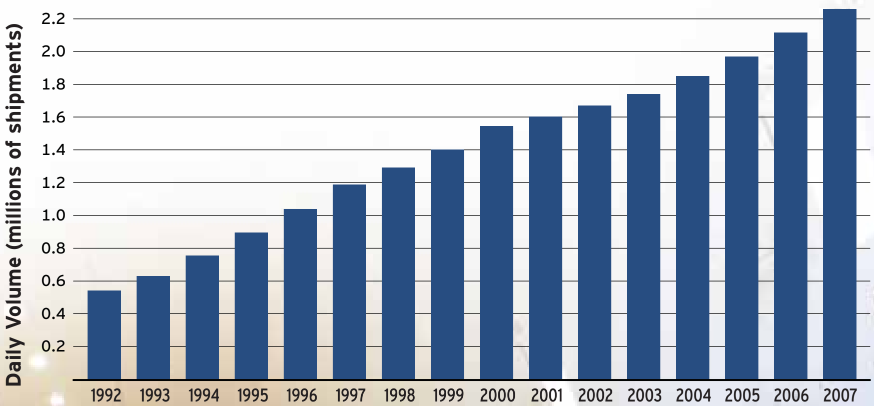
Other key findings:

■ Not surprisingly, ACMG finds that express companies are playing a more prominent role in the international airfreight market. The latest analysis shows international express volumes grew 6.9 percent from mid-2006 to mid-2007 to reach 2.3 million shipments per day. The leading participants in terms of market share are DHL, FedEx, UPS, and TNT, all of which are expanding their international freighter networks. Growth in express shipment volume has averaged 10 percent per year since 1992, and express traffic today is more than four times the level recorded 15 years ago *(see chart)*.

■ In addition to innovations introduced by express companies, ACMG finds that leading all-cargo and combination carriers are continuing to employ new strategies such as product segmentation, joint ventures, and alliances to increase market share and profitability.

■ Leading airlines in Asia generate one-third of their revenue from cargo. Change is particularly evident in China, India, and the Middle East, where airlines are expanding rapidly to meet growing demand for cargo service.

International Air Express Shipment Growth History



Source: ACMG's *International Air Freight & Express Industry Performance Analysis*, 2007

CONTINUED FROM PAGE 42

2008 Supply Chain Update

When considering the global trade environment, a number of potential issues can disrupt supply chain management, sourcing strategies, and the flow of working capital. If these concerns go unaddressed, importers and exporters may face significant unexpected costs and increased supply chain shake-ups. JPMorgan Chase Global Trade Services offers these predictions for 2008.

"Green" Continues to Grow. Public health and environmental concerns will remain a major issue. Continued attention to global warming, lead-based paints, and the contamination of goods will drive businesses toward environmentally friendly packaging, recyclable products, and the enforcement of trade regulations pertaining to the use of toxic electrical and electronic components. The concept of having a green supply chain will move from being a public relations strategy to a necessary means of deriving real economic value and improving compliance. In turn, environmental compliance will push companies to design products manufactured from recycled materials; strive for "zero waste;" and employ sourcing and fulfillment strategies based on less fuel consumption.

Manufacturers Lag in Environmental Compliance. Though a number of environmental regulations have been implemented globally over the past year, a majority of manufacturers are lagging in terms of demonstrating and maintaining compliance with new trade laws such as the Restriction of Hazardous Substances (RoHS) currently in effect in China, Japan, and the European Union. Non-compliance with these directives can result in stalled supply chains, lost revenue, fines, and damage to corporate reputations. While many companies claim to have met certification requirements, others may not be up to par and will need to make further adjustments to their manufacturing processes.

Sourcing Shifts from Asia to the Americas. Coinciding with the 2008 Summer Olympics in Beijing, media attention will focus on China as the world's next potential "bubble" and cause many manufacturers to shift sourcing strategies from Asia to the Americas. The falling U.S. dollar, limited free trade agreements, high energy costs, and rising production costs in Asia will force companies to reevaluate

The coming year presents many opportunities and challenges as global businesses address and incorporate supply chain sustainability efforts, new offshore strategies, and ongoing safety, security, and trade compliance initiatives.

CONTINUED FROM PAGE 44

extended supply chains and move sources closer to their home markets.

Consequently, shareholders and board members might question their company's reliance on China and the Asia region should any further negative headlines arise regarding quality issues or if China receives bad press surrounding the handling of protestors and dissidents prior to the Olympics. While opportunities still exist in Asia, Mexico will become an increasingly popular source for manufactured goods as companies compete on time-to-market strategies, seek financial advantages found in Mexico's multiple free trade agreements, and capitalize on the country's investment incentives, streamlined customs processes, and abundant English-speaking workforce.

Import Safety Initiatives Increase Burden for U.S. Importers. U.S. consumers purchase approximately $2 trillion worth of products annually, shipped by more than 800,000 importers through more than 300 ports of entry, according to the U.S. Interagency Working Group on Import Safety. Due to increased product recall issues and the fact that imports are expected to rise, the Import Safety group in November published an action plan that provides specific short- and long-term recommendations to better protect consumers and enhance the safety of inbound cargo movement.

In 2008, importers will find themselves burdened with new requirements and fines. The Import Safety plan, a set of 14 broad recommendations and 50 action steps such as establishing third-party certification, will raise consumer safety penalties and strengthen enforcement actions to ensure accountability.

Supply Chain Security Initiatives Gain "Teeth." Five years after the introduction of C-TPAT, smaller firms are finding participation critical to the viability of their business. As part of the vendor selection process, more large-scale importers are requiring that vendors become C-TPAT certified or have an equivalent security program in place. While U.S. law does not mandate C-TPAT certification, current participants are examining their own risk exposure and reassessing whether they should be conducting business with a vendor lacking effective, documented security measures. As a result, many smaller companies are creating their own security criteria above and beyond the C-TPAT requirement in a bid to maintain or win additional business with large-scale importers.

In the European Union, manufacturers have the Authorized Economic Operator (AEO) global security program to consider. Similar to C-TPAT, AEO extends customs authorization to the financial and security areas of corporate global supply chains. While AEO participation is not mandatory, certified manufacturers will benefit from expedited processes and preferential opportunities.

Trade Compliance Further Scrutinized. The U.S. government will continue to apply additional resources and emphasis to hold manufacturers, exporters, importers, and brokers in compliance with the letter and spirit of trade control regulations. These efforts will result in even more enforcement, a wider range of mandated corrective measures, and a greater number of negative consequences for those entities that violate the law.

Countries around the world also are focusing on the importance of trade compliance. For example, the United Arab Emirates recently issued Federal Law No. 13 of 2007 on commodities that are subject to import and export control procedures. Non-compliance with its provisions can result in a minimum of one year's imprisonment, considerable fines, or both.

M&A Maelstrom Keeps Spinning Circles

As global businesses expand their presence across borders and supply chains, contraction within the global logistics industry continues to shake up the market. Aggressive players such as Deutsche Post, Schenker, UPS, Kuehne + Nagel, and FedEx have raised the stakes and the mergers and acquisitions (M&A) market shows little sign of slowing down, reports Transport Intelligence's (TI) latest *Global Logistics Strategies 2007* study.

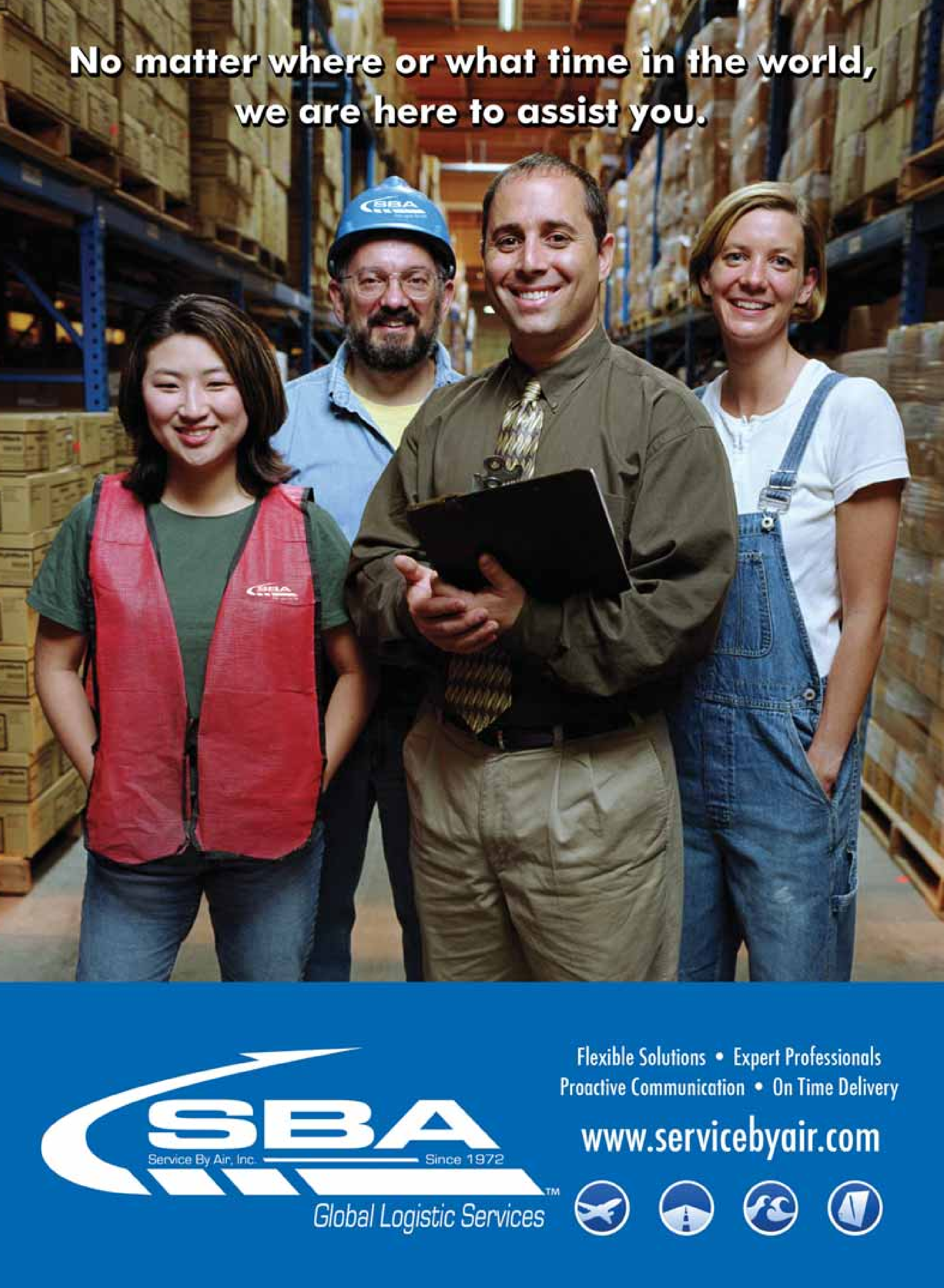
The total disclosed value of M&A deals transacted in the global transport and logistics industry rose to US $73.4 billion last year, an increase of 8.6 percent, according to the UK-based think tank.

The contract logistics, freight forwarding, and express sectors accounted for just eight percent of the total. In terms of deal volumes, however, most were transacted in the contract logistics sector–14 percent of the overall total.

Specifically in the contract logistics industry, the top three deals accounted for 82 percent of the total value. This was mainly due to private equity company Apollo's acquisition of CEVA from TNT and DSV's purchase of Frans Maas.

"Acquisitions are driven by the ambitious growth plans of large and small companies alike. This will ensure that M&A activity remains at a high rate for the foreseeable future," says John Manners-Bell, TI's chief analyst.

An influx of private equity capital, which now accounts for one-third of all deals according to the TI report, will also continue to push contraction in the European, U.S., and Asia-Pacific markets.



CONTINUED FROM PAGE 46

METRO Group Takes RFID Express

Marking yet another milestone in METRO Group's well-documented Radio Frequency Identification (RFID) pilot programs, the Düsseldorf, Germany-based diversified retail and wholesale chain recently announced a partnership with IBM to take its RFID program to the next level. The collaborative effort aims to improve the availability of products in METRO Group's stores as well as boost supply chain performance.

The two companies have partnered to use RFID in a system that tracks shipments from suppliers to warehouses, distribution centers, and stores. They also plan to roll out an innovative customer-focused RFID project in one of METRO Group's Galeria Kaufhof department stores.

Since 2004, METRO Group and IBM have been piloting RFID technology at 20 wholesale outlets. Recently, the companies completed Europe's largest RFID project, which enables real-time visibility throughout the retailer's entire supply chain.

While some global retailers are just beginning to focus on deploying strategies aimed at meeting the needs of increasingly connected and information-hungry customers, METRO Group and IBM are already there.

METRO Group began working with IBM in 2003 to test RFID solutions in its "Future Store." One year later, it ran its first RFID pilot in 20 wholesale outlets. Then in 2007, the company decided to extend its use of RFID to all its Cash & Carry and Real stores to track shipments from suppliers to warehouses and DCs to 200 supermarkets and stores across Germany.

Pallets of goods destined for a METRO Cash & Carry or Real store contain an RFID tag when they leave a supplier or the group's distribution centers. On delivery, RFID readers at each store location scan the tags and pass along data in real time to METRO's merchandise information systems using the IBM WebSphere premises server. Once there, RFID information is aggregated and analyzed.

Elsewhere, Galeria Kaufhof, a division of METRO Group, has teamed with IBM to develop and install a new system to enhance customer service in one of its Essen, Germany, department stores. As part of a pilot program, approximately 30,000 articles in the men's fashion department have been equipped with ultra-high- frequency second-generation RFID tags. Employees use the system to find articles that shoppers are looking for and to monitor stock to ensure that popular items are always available.

The Galeria Kaufhof project is also one of the first to use the EPCglobal architecture framework, which sets communication standards between hardware and software components while also defining data interfaces. The company can capture this data to make better-informed decisions on products it will sell in the future.

CONTINUED FROM PAGE 48

The Ins and Outs of IT Integration

Integrating external business data with internal back-end systems is the single biggest IT challenge affecting trading communications in the supply chain, according to 300 European IT decision-makers responding to a survey performed by independent research company Vanson Bourne on behalf of Sterling Commerce.

Consequently, this lack of integration means retail and manufacturing companies rely heavily on manual communication methods to send and receive order and purchase documents. Companies are also struggling to automate the order-to-cash fulfillment process and electronically enable trading with suppliers and customers quickly and efficiently–leading to lost business opportunities.

"As supply chains continue to grow and extend across geographical boundaries, the challenge of managing the complexity of a growing business community becomes even more critical to achieving profitability and customer satisfaction," says Dave Carmichael, senior product marketing manager at Sterling Commerce.

But only 50 percent of European trading partners use electronic communication to send and receive order information; and only 26 percent use value-added networks (VANs). UK companies are better equipped to handle electronic trading than their French counterparts, but they fall behind German businesses, the study reports.

Almost half of those questioned (46 percent) report that the process of integrating back-end IT systems places the greatest burden on skilled resources and will be the most costly IT issue to resolve. Survey respondents identify meeting customer and supplier mandates to handle new EDI requirements as their second-biggest challenge in supporting trading partner communications, suggesting that the problems associated with integration are only likely to get worse as supply chains become more complex and fragmented.

"Global businesses need to manage B2B collaboration with multiple trading partners with often wildly different technical infrastructures, communications standards, and protocols for exchanging electronic data," Carmichael notes. ■

LOGISTICS **knowledgebase**©

BY DAVID QUIN
President, Active On-Demand
734-547-7200 • ptmmarketing@activeaero.com
www.activeondemand.com

Technology + Execution = World Class Global Transportation Management

Several years ago Active On-Demand's parent company, Active Aero Group (AAG) made the commitment to become the preeminent on-demand global transportation manager and backed it up with a multi-million dollar investment to expand our already industry-leading technology systems. We knew then that our technology had to be linked with exceptional personnel execution and expertise as an integral part of our solution applications in order to confront the ever-increasing challenges as supply chain and logistics management require more and more of a global span.

We also knew it was imperative to break the mindset of shippers that we are not only a "911" answer to emergency supply chain situations but that Active On-Demand could be a most vital link in any shipper's traffic management system on a continuing integrated basis.

As a major step toward this goal, AAG expanded its non-asset based subsidiary into four separate divisions operating under the new name of Active On-Demand. The expansion was in response to our growing base of global clients who require web-based on-demand multi-mode transportation management systems that provide transaction visibility across all modes.

Ours is the only Internet-based system to provide clients with innovative, exclusive technology systems that optimize mode, carrier, and service execution of ground expedite, air cargo, and air cargo charter services that are vital to their supply chains and production operations. With it, we also optimize price, availability, and need time for every RFQ. In addition to managing bids in real time—we offer immediate access to shipment information, from pick up to delivery.

Our four divisions consist of Active Aero Charter (AAC), Active PTM (APTM), Active Surface Management (ASM), and Active Global Solutions (AGS). Active Aero Charter specializes in full aircraft cargo charters; globally; door to door. In 1996, Active Aero Charter revolutionized web-based carrier procurement for cargo charters and is now North America's largest cargo charter portal.

Active PTM operating division delivers exceptional value by optimizing time, cost, and quality on every shipment. APT provides on-demand mode management utilizing a unique web-based process for rapid RFQ shipment processing, milestone management, and total web visibility for each customer's shipment. The system's configurable reporting capabilities support a multitude of client requirement variations. Active Global Solutions features solutions that include ground expedite, air freight, global courier, and next-flight-out cargo services, often times blending these services to maximize value. Active Surface Management provides ground carrier management services for time-sensitive truckload shipments that are the result of peak load capacity variability. As with each of the Active On-Demand operating divisions, it provides competitive pricing and end-to-end milestone visibility. All three divisions operate within the proprietary tracking shipment technology, named APT, provided by Active On-Demand.

And while our selection process is asset-indifferent, our service is backed by contract commitments from the transportation industry's finest carriers, which means we offer our customers the industry's best options. Our non-asset based business model is backed by Active Aero Group's other subsidiary USA Jet Airlines, a Part 121 certificated, air cargo and passenger airline operating a fleet of dedicated aircraft. That fleet includes DC-9s and Dassault Falcon-20s that serve as a safety net for our contract customers during periods of peak demand.

We have completed on-demand assignments involving air and ground transportation from Europe to South America, Chicago to Sao Paulo, Brazil, with a fail-safe, full-service solution for all of our global customers, saving each thousands of dollars in potential lost production time. When normal shipping lanes were blocked by a labor dispute, U.S.-based Asian assembly plants turned to us and we quickly located aircraft, including Antanov-124s, B–747s, A-300s, DC-10s and DC-8s, providing a critical air link for freight en route from Asia to the United States. We have even negotiated unscheduled stops by commercial cargo airlines to accommodate an emergency supply shipment from a Midwest U.S. city to the company's plant not on the airlines regular route, saving the thousands of dollars that would have been spent on a separate jet charter.

Most recently Active On-Demand was selected by Ford Motor Co. as one of 15 firms recently named to the automotive company's preferred supplier's list as part of Ford's ongoing plan to overhaul its supplier program by cutting in half the number of vendors that service the company's supply chain system.

In today's global reach of manufacturing, the smallest of shipments is subject to political turmoil, social unrest, or natural disasters, among others. Those situations call for human expertise and experience far beyond technological advancements and it is in these situations that Active On-Demand personnel excel time and time again. Whether the customer is a manufacturer, freight forwarder, domestic or international shipper, 3rd and 4th Party Logistics provider, Active On-Demand clearly has the leading edge technology and the execution expertise to be a world class global transportation manager.

LOGISTICS knowledgebase©

BY SCOTT J. CONNELL
Senior Vice President, Strategic Development, Greater Waco Chamber
900 Washington Avenue, Waco, Texas 76701
254-752-6551 • www.wacochamber.com
sconnell@wacochamber.com

Waco. We Do.

Greater Waco is a growing dynamic market in Central Texas with a diversified economy. In Waco, we do a lot of different work, make a variety of products and can get them easily to markets throughout North America and around the globe. We also do the things necessary to help businesses compete. Hence, Waco We Do.

Waco is located along Interstate 35 halfway between Austin and Dallas-Fort Worth (100 miles) and midway between San Antonio and the Oklahoma border (175 miles). Waco also is equidistant to Mexico City and Toronto. It has a unique position to meet all major Texas markets, the Port of Houston and key Mexico industrial areas. The central North American location offers access to east and west coasts in less than a 24-hour drive time.

Waco has always recognized its position in trade routes. The suspension bridge, a local monument, at the Brazos River in downtown was the first major business crossing over a major river. It was the connection point for North and South Texas for trade and travel. That spirit stills lives as the community continually works to improve transportation infrastructure and address the booming economy of Texas.

Two major Class I railroad lines run through Waco with capacity for growth. In addition to I-35, two US highways and four major Texas highways cross in Waco. Three airports are located in McLennan County offering a unique opportunity for air traffic and supporting a major target industry cluster of aerospace. Waco Regional Airport is a commercial airport with daily service. Texas State Technical College Airport is an industrial airport with air cargo capabilities. McGregor Executive Airport offers excellent facilities for general aviation and corporate aircraft.

Waco also offers companies a cost competitive environment. The cost of living is below the national average making it a great place to attract talented workers. The local and state tax burden is among the lowest in the country and regulations and permitting is smooth. Incentive programs are available to help companies get up and running as they invest capital and create jobs. Chamber staff members are there to guide companies throughout the process.

Greater Waco has 225,000 people living in the metropolitan area and 670,000 in the market region. The dynamic and productive workforce is supported by three colleges–Baylor University, Texas State Technical College Waco and McLennan Community College. Each institution provides an array of existing and customized degree and training programs for industry. Baylor and TSTC have recently initiated research and training programs in RFID and logistics, while MCC continues to support a truck driving school.

Texas Central Park is a 3,000-acre master-planned park along I-35 that has attracted major companies with distribution and logistics operations. Leading firms such as Mars Snackfood US, Wal-Mart, Sherwin-Williams, Caterpillar, Coca-Cola, Tractor Supply and Romark Logistics see the advantages of their Waco distribution facilities.

When your goal is to get there fast, easier and more efficiently, check out Greater Waco. In Waco, that's what We Do. ■

LOGISTICS knowledgebase©

By Michael D. Desmond
President / CEO, Paradigm Logistics
866.941.7400 • mdesmond@paradigmlog.com

Logistics Partnerships: Are You Ready to Be a Partner?

According to the most recent GMA Study, manufacturers will expend nearly 7% of their sales on logistics costs. Many of those companies will look to the experts in the logistics marketplace to assist them in controlling and reducing said costs.

Many of these manufacturers and others will potentially compile comprehensive RFP's in the coming year to define a qualified list of suitors as potential logistics providers. The invited companies will be reviewed and required to meet numerous criteria including; stability, technology, and experience among many other considerations. As companies make the decision to embark on such initiatives unfortunately many will overlook some very basic components and not all of these companies are truly ready to be a partner.

Commonly overlooked key considerations are cultural compatibility and top to bottom buy in. Not just the executive suite but all the way down to the shipping dock and the people who are in trenches working everyday moving product. While you are in the process of establishing the critical criteria and expectations of a logistics provider, go to the ranks for input as well. What are their challenges, their needs, and their expectations? In addition, ask the big questions internally:

Is everyone in your organization ready to be a partner?

Understanding and communication at all levels is key to the success of your logistics program. At the end of the day, an uninformed and unsupportive shipping supervisor can halt the wheels of commerce. By communicating the goals and scope of a logistics program you can assist in putting all parties at ease if they understand and are a part of the decision making and planning process.

Are you willing to share?

A good partnership must be open book and all parties must be willing to embrace a sharing of data and internal corporate goals to achieve maximum efficiencies and savings.

Is your logistics provider a facilitator or a consumer of information?

Your logistics partner must be your window to internal and external logistics activities and costs. By supplying complete logistics systems visibility and sharing all information both teams can collectively establish joint initiatives which will have a far greater project impact and opportunity for success. In addition, your logistics partner must be in tune with the market in order to bring industry ideas and solutions to you.

Is it your goal to ensure your logistics partner achieves success?

If it isn't, it should be. The relationship needs to be a win win for all parties involved and all parties should reap the benefit of its success. Gain sharing and other incentives can be an excellent catalyst for continued savings. Make sure your logistics partner is onboard and a part of the process of establishing these initiatives and this should be a discussion fairly early in the set up processes.

Are you willing to support a united front?

The partnership must present a united front to customers, vendors and team members alike. A breakdown in focus and continuity can be a recipe for disaster. Regularly scheduled team meetings will ensure common focus as well as an arena to voice concerns and initiatives from both teams.

As we have learned through our years of experience our partnerships have been the key to our achievements and what has allowed us to realize the accomplishments that we have. Our promise of partnership and integrity is at the core of our values and success. Our clients work within a network of complete shared visibility in an open book environment. That coupled with our 24 / 7 access and live support team, enables our clients the piece of mind that their business is always at our fore front and industry leading.

We constantly strive to exceed our client's expectations through unprecedented levels of Technology, Execution and Empowerment.

Paradigm Logistics is the premier logistics management organization in the food products industry throughout North America.

DELIVERING SERVICE AND TECHNOLOGY THAT'S REDEFINING QUALITY IN WAREHOUSING AND TRANSPORTATION

- CONTRACT AND PUBLIC WAREHOUSING
- COMPREHENSIVE WMS WITH RF AND BAR CODING
- MANAGEMENT OF INVENTORY, ACTIVITY, AND SHELF LIFE
- PICK AND PACK
- ASSEMBLY
- U.S. CUSTOMS BONDED
- AIB MONITORED
- GROCERY CONSOLIDATION
- DIRECT STORE DELIVERY PROGRAMS
- LTL AND TRUCKLOAD SERVICES
- LOGISTICS MANAGEMENT

Located in Dayton, NJ, PSS Warehousing and Transportation is in the center of the Northeast Corridor, halfway between New York City and Philadelphia with it's proximity to the major seaports of NJ, NY, Philadelphia and Wilmington.

This means PSS is positioned perfectly to warehouse inventory in your customers' backyards allowing you to offer the best possible response times to meet their needs. And with a network of 1,000,000 sq. ft. of the most modern, secure food grade warehousing space, PSS can handle anything.

Since 1983, it's ongoing mission has been to deliver the highest quality service and innovation in the industry.

PSS
Warehousing • Transportation

7 Nicholas Court, Dayton, NJ 08810
732-274-1333 • Toll Free: 800-777-8754
Fax: 732-274-1358
www.pssdistribution.com

Bob Jaffin is a member of AST&L, sits on two Transportation Research Board panels, and teaches at the American Military University
hazmatgo@metrocast.net

SUPPLY CHAIN SECURITY

TAKING CARE OF BUSINESS

by Bob Jaffin

Proper Hazmat Training Needs to Catch Fire

Hazmat shipments are a common feature of U.S. supply chains. Yet for many businesses, training does not match the frequency with which these products are moving. In 1996, 800,000 movements of hazardous material were made daily in the United States, according to U.S. Department of Transportation (DOT) estimates. Conservative estimates today put that number closer to 1.2 million daily hazmat movements.

Batteries, paint, and perfume top the list of common hazmat violations, a group that also includes cologne, film remover, hairspray, printing ink, nail polish, and an assortment of engine parts for land, marine, and air transport.

From 2000 to 2003, the Federal Aviation Administration (FAA) actively promoted a program that issued formal press releases for all hazmat fines equal to or greater than $50,000.

Analyzing a sampling of the FAA fines leads to some conclusions that should interest logisticians moving hazardous materials. The analysis also shows that support service personnel contribute significantly to the unsafe and non-compliant movement of hazardous products.

From this analysis, two key issues need to be addressed:

1. The problem of non-compliance with hazmat regulations is not unique to any sector of the economy and is unaffected by company size or mission.

2. The bulk of the fines are for shipments of relatively small amounts of actual hazmat products.

Here's an example that typifies these types of fines. Heavy equipment manufacturer Terex was fined for shipping paint; but Terex is not in the paint supply or the equipment-painting business. So the fine was not directly related to its primary product, normal order process, or core competency.

THE RIGHT STUFF

The issue seems to be providing training to the right staff. In this area, the commercial sector takes its lead from the compliance/enforcement agencies, which all focus on shippers, receivers, and transporters. Other entities cannot easily access the more typical aggregate or macro data for proper analysis – they can only respond and react to an immediate triggering event. Their operational managers never get to see the big picture.

The 49 CFR (Code of Federal Regulations for Hazmat Materials) is well-written and contains well-defined training requirements. But the way the enforcement community, especially the DOT, has interpreted and applied that requirement has not set the proper tone and has moved training in the wrong direction.

The DOT, Pipeline and Hazardous Materials Safety Administration (PHMSA), and the FAA do not properly review non-compliance data or individual cases to identify trends and understand business implications. Those organizations only look at the "hazards," ignoring the business operations that created those violations.

Since the implementation of HM-181's hazmat protocol more than 10 years ago, the DOT has continued to use the narrowest lens when addressing function-specific training and the application of 49 CFR in the commercial world. Enforcement has essentially focused on the shipping cycle. But the bulk of the problems, and therefore liability issues, stem from the "order" or "logistics/customer service" cycle and that concept continues to get sort shrift from regulators.

From a practical standpoint, proper training can be accomplished relatively inexpensively with minimal impact on production/operations. Providing appropriate instruction speeds order processing while reducing organizational and individual exposure and liability. ■

Chris Sorensen is vice president
of Dickson Company
630-563-4222 • *csorens@dicksonweb.com*

VIEWPOINT

by Chris Sorensen

Who Ruined the Inventory?

If you got a call from a customer complaining that the temperature-sensitive goods you shipped were ruined, would you be able to track down where and how it happened? If the problem was on their end, could you prove it? What if a supplier sent your company decayed goods?

Nobody needs disputes like this wreaking havoc throughout the supply chain. These kinds of disputes are predictable, however, if any link in the supply chain is deficient in temperature- or humidity-monitoring techniques.

The following five best practices ensure both appropriate storage and handling techniques and your ability to document them.

1. Put warehouse mapping on a regular schedule. Don't make the mistake of thinking that warehouse temperature and humidity mapping is a one-time proposition. Even gradual changes in supply inventories can combine to create different temperature or humidity dynamics in a warehouse, such as hot spots where airflow has become restricted.

Closely regulated companies, such as those in the pharmaceutical industry, may require ongoing monitoring of warehouse conditions. But for many other companies, monitoring is more a matter of customer-driven compliance issues. Showing a customer that warehouse conditions were monitored one year ago or even two months ago might not cut it in the event of a dispute.

2. Determine critical mapping points. Many companies go through the motions of warehouse mapping without proper knowledge of what is truly required. One example: a 50,000-square-foot warehouse with 30-foot-tall ceilings that uses only a few data loggers and places them all at the six-foot level, ignoring the dynamics of hot air rising.

Such practices ignore typical problem areas near ceilings, doors, heaters, and exterior walls or where racking, shelving, or pallets constrict airflow. Exits to unconditioned spaces or outside should always be monitored; so should areas near any HVAC outlets.

3. Select appropriate data loggers. In recent years, a proliferation of data logger models has been introduced. Warehouse and supply chain personnel who understand current options will have a much easier time finding the technology that best matches their application.

Putting a thermometer here or there in a facility is not meaningful. Chart recorders or data loggers that keep track of temperature and/or humidity over time are required. Choosing the best instrument begins with zeroing in on your requirements for data capacity, sampling rate, monitoring range, size, battery life, calibration schedules, software, and networking capabilities.

Push-to-start data loggers are an important tool for shippers. These loggers allow the monitoring process to begin as soon as inventory is loaded on trucks or sealed in packages. For packages being shipped by air, smaller, coin-sized data loggers may be of particular interest.

The types of data loggers that include minimum/maximum displays can be useful in managing potential supply chain issues. When shipments arrive, these loggers provide a quick reference to ensure that their temperature and/or humidity conditions remained within required specifications.

4. Data handling and retention. Documentation is key. If you do get that customer call complaining about ruined inventory–or need to make a call to your supplier–it should only be a matter of minutes before all the

CONTINUED FROM PAGE 60

temperature and humidity monitoring data is immediately accessible. That's the beauty of data loggers.

All monitoring data can be exported to Excel spreadsheets and when required, calculations of mean kinetic temperatures (fixed temperatures that simulate the effects of temperature variations over time) can be performed. For those who prefer to use chart recorders, the physical charts can be filed appropriately so they can be retrieved when needed.

5. Keep an eye on productivity. While monitoring temperature and humidity conditions is important in many supply chains, it does not need to eat up personnel time to any great extent.

Three common errors can make temperature and humidity monitoring an onerous and time-consuming task.

First, some warehouses do not have a sufficient number of data loggers or chart recorders to complete a mapping exercise in one step, so they spend a good deal of time rotating loggers from place to place. Data loggers and chart recorders are relatively inexpensive items compared to the total capital expenses that many warehouses incur. The labor costs for mapping a facility's environmental conditions piecemeal usually cannot be justified.

Second, excessive sampling causes a problem. Temperature and humidity changes occur relatively slowly. In a typical open warehouse of moderate size, sampling every 10 to 15 minutes should adequately evaluate temperature trends. Excess sampling is both unwieldy and an unnecessary drain on productivity that ties up both computers and managers in processing too much data.

Third, using out-of-date technology can threaten the success of an environmental monitoring program. Purchasers sometimes buy monitoring instruments from sources with limited model options instead of from suppliers offering a wide range of instruments with varying features.

For example, chart recorders and data loggers that use both audio and visual alarms to alert of unacceptable conditions are important to source. USB-enabled downloading is another big time-saver, as are the min/max display instruments that can tell at a glance whether temperature or humidity has veered into the unacceptable range.

By following proper inventory monitoring strategies and avoiding common errors, you can reduce the likelihood of receiving a call from a customer asking, "Who ruined my inventory?" ■

Dennis Estep is the Senior Director
of Customer Solutions at UPS.
destep@ups.com

CARRIERS CORNER

by Dennis Estep

Shipping Perishables Without Going Bananas

Perishables. It's a word that can make any shipping manager or logistics provider cringe. The loss of perishable goods in transit means lost revenue.

But a host of technologies and new solutions take the fear out of shipping perishable goods such as pharmaceuticals, food, and plants. Choosing the right type of packaging and testing it before shipping your perishable goods will protect them. You can further increase your chances of making safe and timely deliveries by evaluating what you're shipping in the first place. And, of course, always plan and prepare for the worst.

Whether you're an experienced shipper of perishables or just expanding into this type of shipping, it's important to ask the following questions:

What kinds of perishables are you shipping? The first step in preparing to ship perishables is to identify the kind of product you are shipping and its limitations. For example, if you ship bananas, which have a limited shelf life and can't be frozen, they have to get to the customer very quickly. As a result, air express shipping may be the best transportation mode.

In general, food will spoil if exposed to improper temperatures or humidity levels or long periods of time prior to consumption. Pharmaceuticals can become unsafe or ineffective if temperatures or humidity levels exceed allowable ranges. And plastic becomes brittle in low temperatures.

In other words, examine what makes your particular product perishable.

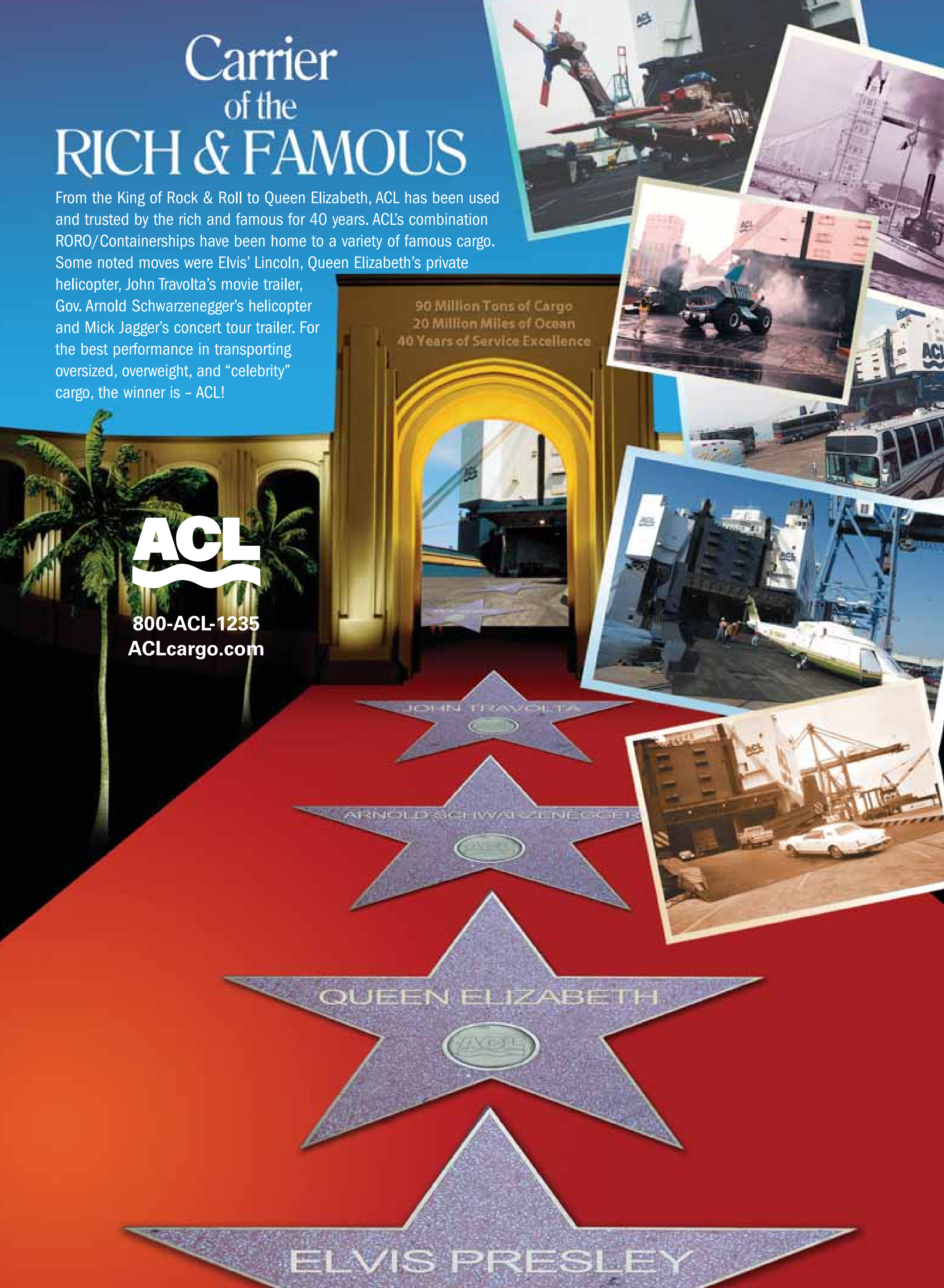
What types of environmental conditions will your goods endure? Consider the environmental conditions that the goods will endure while in transit. Will the goods go through high-humidity zones or extreme low-temperature zones? Take these factors into account when determining how to package your perishables.

Some logistics providers offer thermal packaging materials customized to fit your products' specifications, anticipated transit times, and expected conditions. Consider working with a provider that can offer visibility into your packages at all times and provide temperature monitoring in transit.

As an additional step, find a logistics provider that offers testing chambers to simulate the range in temperatures and humidity levels that your goods may encounter in their journey from point A to point B. For instance, if you plan to ship pharmaceuticals from Orlando, Fla., to Montreal, a test chamber can expose your sample package to the most likely temperature and humidity fluctuations it will encounter along the way. Once the package has gone through testing, the logistics provider can identify the best types of packaging to use to ensure optimal results.

What transportation modes do you use? Besides the range of temperature and humidity levels that your perishable goods may endure, consider the transportation modes you use–truck, ship, rail, or plane. Each mode brings a different set of potential problems.

Working with an experienced logistics provider, you can test your packages against a number of forces that they may encounter in transit–including compression, falls, and shock. Testing to make sure your perishable goods are packaged properly to avoid damage from the impact of these forces will prevent problems down the road.


Carrier of the RICH & FAMOUS
From the King of Rock & Roll to Queen Elizabeth, ACL has been used and trusted by the rich and famous for 40 years. ACL's combination RORO/Containerships have been home to a variety of famous cargo. Some noted moves were Elvis' Lincoln, Queen Elizabeth's private helicopter, John Travolta's movie trailer, Gov. Arnold Schwarzenegger's helicopter and Mick Jagger's concert tour trailer. For the best performance in transporting oversized, overweight, and "celebrity" cargo, the winner is – ACL!
90 Million Tons of Cargo
20 Million Miles of Ocean
40 Years of Service Excellence
ACL
800-ACL-1235
ACLcargo.com
JOHN TRAVOLTA
ARNOLD SCHWARZENEGGER
QUEEN ELIZABETH
ELVIS PRESLEY

CARRIERSCORNER

CONTINUED FROM PAGE 64

Planning ahead and complying with not only U.S. government regulations but also regulations abroad can ensure that your goods arrive on time and intact.

Do your goods comply with government regulations? The next step is to consider what, if any, government regulations apply to the goods that you're shipping. Packaging of pharmaceutical products, for example, must meet federal health regulations.

Also, do you ship goods cross-border and have to deal with Customs clearance? If so, make sure that your goods are approved by Customs in time to make it to their final destination without being ruined.

Planning ahead and complying with not only U.S. government regulations but also regulations abroad can ensure that your goods arrive on time and intact. You don't want your perishable goods hung up in Customs.

What are the benefits of proactive testing and preparation? If you adequately prepare your perishable goods for transit, your company can realize significant cost savings and other benefits, including:

- Less damage of your perishable goods, resulting in fewer customer complaints and lower costs due to a reduction in replacing broken items.
- Less money spent on shipping due to fewer returns and fewer replacements.
- More efficient use of packaging material.
- Maximization of space in containers that are placed on ships and trucks. Packaged properly, your goods may take up less space, reduce your liability, and save you money.

An experienced logistics provider can assess your current packaging materials and processes and recommend improvements. A provider also can offer prototypes and package alternatives tailored to your products and prevent future damage to your perishables by designing an effective packaging solution for any new products your company introduces. Finally, a logistics provider can deliver on-site training and follow-up analysis to ensure you are implementing the correct solution.

Even if you prepared for the worst, should you buy insurance just in case? The normal insurance offerings that shipping companies provide generally do not cover the loss of perishables due to late deliveries. If the carrier damages, destroys, or loses the goods, then the carrier-provided insurance coverage will kick in to cover these scenarios.

But what if the goods weren't damaged or destroyed and they were eventually delivered–although late? In this instance, the insurance wouldn't cover the loss because the carrier did its job by ultimately delivering the goods–albeit late, which would enable you to seek a refund of the shipping charges but not the value of the now-spoiled goods.

In these instances, it might be wise to seek protection such as supplemental insurance. These offerings protect against the loss of perishables due to late deliveries and replace traditional shipping company-provided coverages. Some policies cover the costs associated with the late delivery of items, including refunding the face value of concert tickets, which are "perishable" if they're delivered after the show.

When it comes to taking steps to prevent perishables from perishing, there's no substitute for thorough planning. Know your product, know your carrier, and know your options. Comparing various types of packaging to find the best option can cut costs dramatically. Taking the additional step of testing the packaging of your goods will ensure the highest safety levels. Leave as little as possible to fate and you'll greatly increase your shipments' chances of arriving at their final destinations on time and intact. ■

Barry G. Hibbard is
vice president for commercial and industrial
development at Tejon Ranch Company.
661-248-3000 • *bhibbard@tejonranch.com*

ECODEV

ISSUES AFFECTING ECONOMIC DEVELOPMENT

by Barry G. Hibbard

Combating Congestion: Consider Moving Out

Americans have seen tremendous technological advancement in the past 50 years. We operate and communicate at a faster pace, with one glaring exception: the physical movement of people and products. We still move goods on the same transportation infrastructure that President Eisenhower created in the 1950s.

Back then, infrastructure was created to accommodate the growth of the next 25 years. Today, however, we add capacity to our transportation infrastructure to handle the growth of the previous 10 years. Most current transportation projects merely make congestion "less worse." The lack of adequate highway infrastructure capacity has created serious challenges for goods movement and warehouse operations.

Manufacturers and distributors increasingly use their supply chain networks to gain a competitive advantage in the marketplace. Having the right product in the right quantity, place, and time and at the right price is crucial, and too much or too little inventory can be costly. For example, Target notes that it can save $100 million to the bottom line by taking one day, on average, out of its supply chain transit time from Asia to its U.S. retail stores. But the uncertainty of goods movement on today's highway system makes it necessary to add costly safety stock inventory, which ultimately equates to a congestion tax on consumers.

Warehouse location and site selection studies show a distinct trend of highway accessibility as one of the top three criteria, along with transportation costs and labor. Inbound and outbound transportation costs typically represent 55 to 65 percent of a warehouse's operating costs, which are directly affected by traffic congestion and delays. Trucking companies have begun pricing their services based on a location's impact on their tractor and trailer asset utilization goals.

LABOR COSTS

Congestion also has an impact on labor availability and quality. Commuting 30 to 60 minutes each way in heavy congestion affects workers' productivity and quality of life, which ultimately affects turnover rates and retraining costs. Annualized line-haul driver turnover rates average 120 percent, and a major cause is drivers' frustration with traveling the congested highway system, according to the American Trucking Associations.

Corporations serving critical metropolitan market areas must choose between locating close by or selecting a less congested location farther away. When Best Buy recently needed to locate a new 650,000-square-foot warehouse facility to serve the Northeast, it selected the relatively uncongested area of Nichols, N.Y. Highway accessibility and a lack of congestion were important elements in the final decision, according to the site selection team.

The Los Angeles metropolitan area holds the U.S. record for the worst highway congestion and traffic delays. The Central Valley of California, along I-5, has proven to be an excellent option for regional distribution centers seeking to avoid L.A.'s congestion. Close enough to serve the major local markets but able to operate outside heavy congestion zones, the Central Valley will continue to gain acceptance as congestion increases near L.A.

Traffic congestion continues to worsen in American cities of all sizes, creating a $78-billion annual drain on the U.S. economy in the form of 4.2 billion lost hours and 2.9 billion gallons of wasted fuel, according to the Urban Mobility Study conducted by Texas A&M University. Until significant infrastructure expansion alleviates congestion, site selectors and companies should consider distribution center locations that already have excess infrastructure capacity. ■

01.08 THE STATE OF LOUISIANA:

NOT-SO-STANDARD SHIPPING AVAILABLE.

▶▶ Louisiana's port system is the largest in the world with 2,300 miles of navigable inland waterways connecting 27 ports and handling 460 million tons of cargo annually ▶ The state is covered by six interstate highways, 2,699 miles of rail track and is one of only two sites in the nation where all of North America's Class One railroads converge ▶ With more than 70 public and private airports, Louisiana can support any size aircraft ▶ As the gateway to the heavily industrialized Mississippi River Valley, nearly half of all U.S. grain exports pass through Louisiana ports, along with chemical, coal and general cargo ▶ Louisiana's waterways allow for trade with more than 190 countries and enable waterborne commerce with 35 states ▶ The Port of South Louisiana is the 4th largest volume shipping port in the world and largest in the Western Hemisphere, as well as the world's largest bulk cargo port

LOUISIANA ECONOMIC DEVELOPMENT

To learn more or to find out about valuable Gulf Opportunity Zone Incentives, call Don Pierson at 225.342.4319 or visit us at LouisianaForward.com/InboundLogistics

Nick Bova is the general manager for
Junction Solution's Food & Beverage practice.
nbova@junctionsolutions.com

ITMATTERS

by Nick Bova

Tracing the Genealogy of a Food Recall

Anyone who has ever tried to trace their roots back more than a few generations knows how challenging that task can be. Unless you're of royal lineage, the path back through history tends to be lined with false leads and dead ends. If you do find any information, it's often on handwritten notes that you have to painstakingly sort through and review to glean the information you need.

This is the same challenge food processors can face when a problem with end products that use produce arises. Tracing the lot back through handwritten ledgers to the grower, block, and field to discover what other products may have been affected is a painstaking and costly effort. And all it takes is one zero that looks like a six in one entry to send the entire investigation in the wrong direction, creating delays in performing a recall and increasing your company's exposure.

MOVING FORWARD

Tracing that lot forward to all the products in which the bad produce was used can be an equally daunting, transaction-heavy task involving multiple receipts, bills of lading, purchase orders, and other paperwork.

A new generation of enterprise software designed specifically to meet the needs of food and beverage processors can help solve these issues. Data on each lot received – such as grower, field, and date – is entered once. This data is then maintained throughout the manufacturing cycle in a manner that's compatible with the way food is processed, providing a precise lineage for every finished product.

Should a problem arise, simply specifying the grower, field, and associated date range retrieves the appropriate lots and constructs the entire history in minutes rather than hours, allowing you to act quickly and decisively when it's needed most.

In any type of endeavor where record-keeping is required, the biggest risk is human error. Even if someone enters the correct information, it doesn't mean it will be legible to the person trying to read it.

All it takes is one zero that looks like a six to send the entire recall in the wrong direction, creating delays and increasing your exposure.

DOUBLE WHAMMY

No matter the cause, the impact of a mistake is two-fold. First, you won't be able to recall all the products with problems – at least not right away. It will take time to find and decipher the entry; it may even require finding the operator who made the entry to determine what it says. All this could put you well beyond the four hours the Food and Drug Administration mandates for a recall. If the error is bad enough, you may even miss a few lots.

Another problem with manual tracking is that you may recall products that are perfectly safe, which costs you unnecessarily. It reduces your overall


LOG-NET
Version 6.0

CONTINUED FROM PAGE 70

margins and ties resources up in tracking, shipping, and receiving products that don't need to be handled again. This manner of tracking could also hurt a food company's brand image by associating it needlessly with a product recall.

SALAD DAYS FOR SPINACH

The September 2006 spinach recall illustrates the problems associated with lot tracking. Because spinach from a single field was used to make products under a variety of brand names, the ties between the brands were not readily apparent.

It was only after exhaustive transaction tracing that the common bond was uncovered and the problem contained–a process that took nearly one week. In the meantime, many unaffected batches of spinach, as well as some forms of lettuce, disappeared from grocers' shelves in the interest of safety.

With the right software performing end-to-end management you can not only eliminate manual data entry but also track product lineage based on the way your food-processing plant works, for instance by viewing batches within a shift or between clean-ups as a single batch. That way if a problem with a timeframe or project crops up, you can trace it back quickly and easily to all products made during that assignment, minimizing the use of resources and eliminating additional transactional costs. You can just as easily trace issues forward to all products made from a compromised batch.

Using enterprise software with date-based, extended lot-trace functionality to tie finished goods to the batches from which they're produced provides all the information you need to trace ingredients back to the farm or forward to grocers' shelves. The minute a bad finished product is identified, you can run a report that shows where the ingredients in the batches came from, when the batches were used, and where the finished products went.

CRISIS AVERTED

Automating the process takes much of the risk out of batch tracing while improving your organization's ability to respond in a crisis. It puts you in better control of the data, ensuring you have timely, accurate information within minutes of placing the request.

Implementing the right food logistics software solution can make you the envy of genealogists–and competitors–everywhere. ■

From yesterday's legacies to tomorrow's visionaries, the theory and practice of inbound logistics is timeless.

THE EVOLUTION OF INBOUND LOGISTICS

by Joseph O'Reilly

THE FORD AND TOYOTA LEGACY: ORIGIN OF THE SPECIES 78
INBOUND'S EARLY ADOPTERS: SURVIVAL OF THE FITTEST 96
CHOOSING INBOUND: NATURAL SELECTION 112
INBOUND LOGISTICS: A NEW ORDER 124

THE EVOLUTION OF INBOUND LOGISTICS

For this magazine and its loyal readership—both veterans and newcomers—inbound logistics is a 27-year story about a radical vision that continues to define a revolutionary paradigm shift. But its history, and consequently ours, runs much deeper.

Inbound logistics, in principle and in print, an anomaly. It both defies and embraces time; it assumes many forms and variations but is defined by a common demand-driven trait; it is very much an agent of change, yet equally derivative of change itself.

In an effort to give shape to this legacy and our mission, we dedicate this year's Logistics Planner issue to the evolution of inbound logistics.

We begin our narrative with a retrospective of Ford Motor Company's just-in-time assembly line and the Toyota Production System (*pg. 78*). Revisiting Henry Ford's and Taiichi Ohno's seminal memoirs, *Today and Tomorrow* and the *Toyota Production System: Beyond Large-Scale Production*, presents two important markers for tracking the development of demand-driven logistics from yesterday to today.

"It is one of the oddities of business that a man will cite what he has done in the past as proof of what he can do in the future. The past is only something to learn from."

– Henry Ford

Within this developing sequence, we present an inbound story of adaptation and survival (*pg. 96*). Beginning with the origins of *Inbound Traffic Guide* in 1981, the theory and practice of inbound logistics took root in the very pages of this magazine. From our archives we rediscover case histories that transcend time and trace the progression of demand-driven logistics from cellular acceptance to mass replication.

From this phase, we jump to the present (*pg. 112*), with a look at how H.J. Heinz Company and Toyota Industrial Equipment Manufacturing are engineering technology and process to leverage inbound transportation processes and drive visibility and efficiency within their supply chains.

Finally, we shift our scope from the present to the future (*pg. 124*) and consider how two forward-thinking companies–American Greetings and Panasonic–continue to adapt their go-to-market strategies through the lens of inbound transportation and demand-driven programs.

Individually these stories reveal the unique economic drivers, global trends, and consumer dynamics that continue to shape the evolution of inbound logistics. Collectively, they present a meta-narrative of leadership and vision that challenges the status quo, permeates physical and cultural silos, and engineers a path for innovation and transformation across the supply chain.

Invariably the future of supply chain management, and specifically inbound logistics, owes a great debt to the past–and this evolution still holds much to glean. As Henry Ford sagely observes in *Today and Tomorrow*, "It is one of the oddities of business that a man will cite what he has done in the past as proof of what he can do in the future. The past is only something to learn from."

MORE STOPS. LESS MILES.

"In just our first week, productivity increased and our drivers were driving less miles per day."

– Chris Withers
Southwestern Motor Transport

"Cheetah has enabled us to better utilize our manpower and equipment resources, giving us more stops per man hour with less miles driven."

– Clete Cordero, Vice-President Business Improvement
Benton Express

"We are able to do more stops with fewer trucks and have experienced a substantial decrease in miles driven."

– Robert Slak, President
RAS Delivers

"We've lowered the number of miles driven per stop by 6% and increased stops by 10%, saving us over a million dollars a year."

– Greg Confer, VP Business Development
Ward Trucking

With minimal start-up costs, Cheetah provides dynamic, intelligent, wireless solutions for automating and optimizing pickup, delivery, dispatch, and customer service. Fully scalable and Web-based, Cheetah solutions dramatically increase efficiency for carriers of any size.

Increase your margins fast, easily, and affordably.

Call 1-888-CHEETAH. www.cheetah.com

CHEETAH
Revolutionizing Speed of Service

THE FORD AND TOYOTA LEGACY:

ORIGIN OF THE SPECIES

Today, lean manufacturing and demand-driven strategies are considered innovative and sophisticated competencies. But their origins are neither novel nor complex.

One century ago, matching supply to demand was business as usual in rural agricultural areas. Production and consumption existed within closed-loop supply chains and goods were largely manufactured and consumed as needed, suggests Godfrey Linge, an economist at the Australian National University.

"In essence, just-in-time (JIT) manufacturing represents a return to the kind of relationship between producers and consumers – such as blacksmiths and farmers – that existed before the Industrial Revolution: people specified what they wanted and craftsmen met these individual requirements," Linge says.

Henry Ford, the pioneer of assembly-line JIT manufacturing and founder of the Ford Motor Company, was well aware of this type of rural reciprocity, having grown up in a small agricultural community outside Detroit, Mich. What the small town couldn't supply or produce within its own means and bounds, it sourced and transported through the local post office.

Small business, and then big business, grew up around points of consumption and transportation, Ford recalls in his seminal book, *Today and Tomorrow* (1926).

"In earlier times, the market spot was necessarily the manufacturing spot. Most of the stuff was made in town. All the trades grew up around the post office. The blacksmith made most of the farming implements. The weaver made most of the textiles that the kitchen industry did not cover. A town was almost a self-supporting community," Ford writes.

Increased industrialization, however, altered this dynamic. The development of more efficient and sophisticated communication and transportation technologies spurred the growth of major cities while connecting the urban with the rural. The U.S. railroad and the emerging acceptance of "railroad time" similarly created a standard by which service and reliability could be measured and benchmarked. Inevitably, market opportunities opened up for producers to source product from and sell to, creating a more competitive, consumer-driven business environment.

But mass consumption also radically changed the local supply chain as demand began to outpace supply, forcing businesses to grow in a different trajectory. Product had to be manufactured and marketed in such a way as to target a broader and more generalized buying population, and the internal structure of the enterprise began to fracture and stratify.

"The staff responsible for design, production, and sales became organizationally separated," notes Linge. "As a consequence, the emphasis shifted away from customer service and satisfaction."

This shift toward functional silos

created a manufacturing paradigm where cost and service efficiency began to diverge. But the idea of a self-supporting, vertically integrated community was not lost on Ford, and this model inevitably served as the prototype for the Ford Motor Company during its boom years.

THE PROCESS OF ENLIGHTENED MANUFACTURING

The genesis of Ford's economic business philosophy, and by extension his vision for JIT manufacturing, was largely driven by his recognition that paying higher wages to factory workers would incent greater productivity.

This practice served Ford well and the company's success predictably coincided with the decision to double wages to five dollars a day in 1914. But, as necessity was the mother of invention, Ford learned this lesson through the company's own growing pains.

Prior to the emergence of the assembly line and the five-dollars-a-day wage, Ford Motor Company relied on skilled labor to essentially make automobiles fit to the specification of available components. This resulted in numerous time and cost inefficiencies, observe Daniel Raff and Lawrence Summers in their paper, *Did Henry Ford Pay Efficiency Wages?*

"Ford was not manufacturing, but merely assembling, cars. The parts were produced by outside machine shops and were not made to any particularly high tolerances. A great deal of shaping and fitting was required to get them together properly," they write.

What was lacking was control–over the quality and standard of parts and components in the supply stream, and over the inbound flow of materials coming from outside sources. No checks and balances were in place to mediate discrepancies within the manufacturing and assembly process–and it showed.

In 1908, five years into its existence, Ford Motor Company's annual yield of 10,607 automobiles represented only 9.8 percent of the total market, according to Raff and Summers. The introduction of Ford's Model T soon thereafter, and a new strategy for streamlining the production process and creating wage incentives for workers, shifted this balance immeasurably.

Simply focusing on building one car–the Model T–Ford created higher standards for manufacturing parts. In turn, the company was able to engineer a repetitive process for assembling these components, reducing lead times, eliminating the need for skilled labor, and creating a blueprint for mass production on an entirely new scale. By 1913, Ford Motor Company was producing more than 248,000 automobiles each year and by the 1920s its annual output had surpassed two million units.

From 1913 on, Ford Motor Company's Highland Park and Rouge River production complexes (*pictured*) became centers for Henry Ford's just-in-time manufacturing and assembly process.

No doubt the answer is yes. The question is, how?

We manage supply tiers

Foreway has the answers. We can help you create a seamless flow by smoothing the interfaces between vendors, procurement, production, shipping, and the customer. We act as the go-to resource, closing the gap between operational and cross-organizational functions. **We manage from order to end-user,** maintaining constant contact with suppliers, customer service, production, and customers. We manage warehouse and DC providers, carriers, and private fleets, **building an efficient, cost-conscious freight management program.**

Foreway. We manage. **You save time and money.**

Foreway

Integrated logistics. **We manage.**

~ process
~ technology
~ supply tiers
~ data

616 997 3741 Lee Bulson
www.foreway.com

THE EVOLUTION OF INBOUND LOGISTICS

Henry Ford's just-in-time assembly line depended on a steady flow of parts and raw materials. To facilitate this, Ford Motor Company acquired a number of "village industries" and transportation assets to control the supply and movement of goods.

> "It is a waste to carry so small a stock of materials that an accident will tie up production. The balance has to be found, and that balance largely depends on the ease of transportation."
>
> — Henry Ford

As manufacturing demand began to dictate the flow of supply, the company's Highland Park, Detroit, plant emerged as the center of this new productivity revolution, writes Bruce Pietrykowski, professor of economics at the University of Michigan-Dearborn.

"There, unlike the older vertical production structures marked by skilled workers assembling cars in teams by hand, a modern horizontal plant layout allowed workers to remain stationary while the parts and components moved around them," he observes. "Borrowed from the meat-packing industry, the assembly line facilitated both the division of labor and increased flow of product."

Ford didn't stop there. Instead, he diversified the company's business interests to include a number of village industries to gain better control over supply. Not only was Ford Motor Company producing a revolutionary vehicle for transport, and in the process controlling the means of production, the manufacturer also became its own supply line, acquiring raw materials, energy resources, and transportation assets necessary to support the entire enterprise.

The idea of controlling such a vast breadth of resources, rather than relying on suppliers who invariably spiked their prices, fueled Ford's business philosophy to create the best product at the lowest cost to the consumer, while still paying employees a high wage. It also presented a revolutionary productivity paradigm that, at its core, depended on the seamless integration of inbound and outbound transportation processes and product flows.

Given Ford Motor Company's unprecedented scope and scale of sourcing and manufacturing activities, the importance of managing workflows and controlling inbound transportation was substantial.

THE EVOLUTION OF INBOUND LOGISTICS

The introduction of the Model T and the assembly line in 1913, and the five-dollars-a-day wage incentive one year later, ushered in a new age in mass automobile production.

Compared to his analysis of labor productivity, and perhaps reflecting the times, Ford's writings are less explicit about the role of transport within the broader fabric of his company's supply chain. Pietrykowski addresses this sticking point in terms of the production shift to a more decentralized network and consequent cost drivers.

"Given the need to coordinate parts supplies with assembly schedules at the Highland Park, Rouge, and, later, branch assembly plants, it is not clear how the transfer of production from vertically integrated plants to company-owned plants outside Dearborn/Detroit would economize on transportation or coordination costs," he writes.

SMALLER IS BETTER

Ford, however, was quite clear in lauding the economies of tasking smaller facilities with specific production tasks, rather than relying on larger facilities capable of producing multiple parts. While larger, vertically integrated factories could produce greater quantities, they also held greater inventories. A network of smaller, assimilated manufacturing facilities were better suited to feed and withdraw parts and components as demand dictated.

In turn, transportation became a key integrating force in this new "just-in-time" manufacturing environment. The fact that Ford Motor Company owned interests across all modes – rail, ocean, and even air – eschewed outside suppliers when possible, and dictated inbound protocol when it wasn't possible, reveals some underlying tenets of inbound logistics–and perhaps a business case for this change in facility utilization.

Whether Ford conceptually understood the importance of inbound transportation, or whether it was simply derivative of operating a lean manufacturing process, is unclear. What is evident is that Ford recognized both the merits and challenges of managing transportation in an increasingly industrial and global world.

"The real limit to the size of a corporation is transportation," he writes. "If it has to transport its commodity too far, then it cannot give service–and it limits its own size. There is far too much transportation anyway–too much useless carting of goods to central points from there to be distributed to points of consumption."

It's little wonder that Ford appreciated "time" as much as he did the "division of labor" and the "application of power;" and valued a production and distribution network that eliminated warehousing of spare inventory–a fact he was quite proud of. But the cost and time efficiencies of this differentiated production model were unavoidably contingent on inbound and outbound transportation.

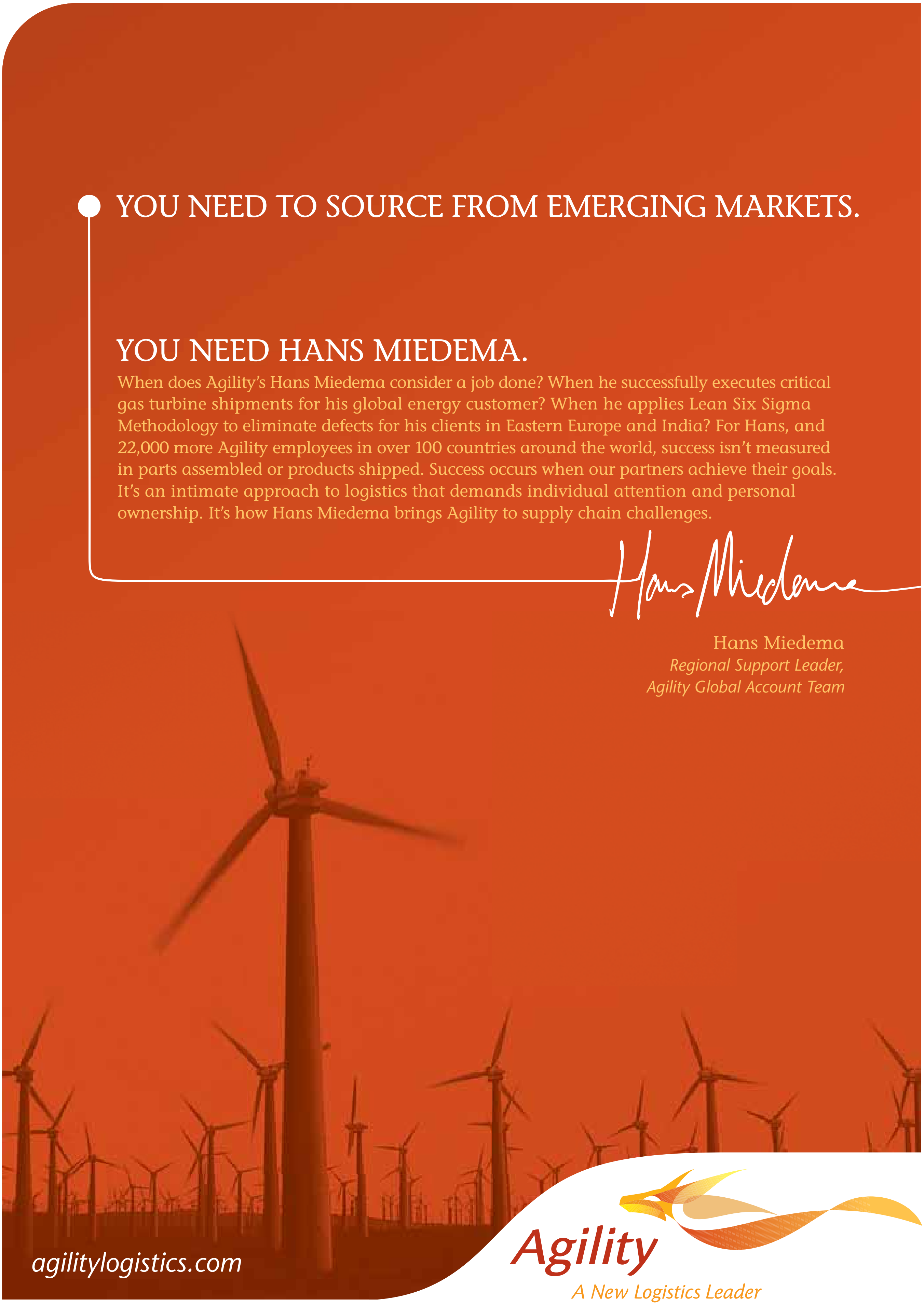
"Our finished product, in the way we ship and assemble, goes out with a minimum transportation charge," Ford observes. "But if Fordson [the River Rouge plant] did not deal in heavy, bulky raw materials it would not pay. It pays because it combines quick transportation both inward and outward…The cost of power and transportation is controlling."

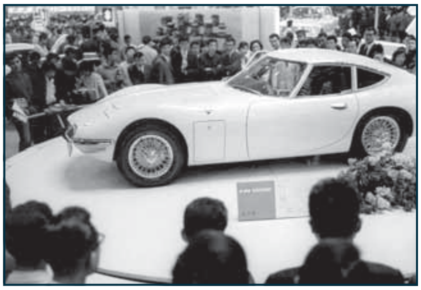
LEANING TOWARD LEAN

In this manner, and with this level of control in aligning demand to supply, Ford Motor Company mass manufactured product without undue time or cost. Accordingly, Ford's philosophy on time–"the easiest of all wastes and the hardest to correct"–corresponded with the progression of the company's lean manufacturing ideology and practice. But Ford was also a realist, and identified the inherent risks of running too lean, as well as the role transportation might play in creating necessary lead times.

"It is a waste to carry so small a stock of materials that an accident will tie up production. The balance has to be found, and that balance largely depends on the ease of transportation," he writes.

Ford's dualistic indictment of industry's demand for, and dependence on, transportation fed the company line for creating a more efficient process within the enterprise–from supply to manufacturing to market. In spite of his penchant for micromanaging productivity and quality control within the factory, he was also astute enough to see beyond the four walls and recognize the emerging importance of speed: "Modern business–modern life–cannot afford slow transportation."


YOU NEED TO SOURCE FROM EMERGING MARKETS.
YOU NEED HANS MIEDEMA.
When does Agility's Hans Miedema consider a job done? When he successfully executes critical gas turbine shipments for his global energy customer? When he applies Lean Six Sigma Methodology to eliminate defects for his clients in Eastern Europe and India? For Hans, and 22,000 more Agility employees in over 100 countries around the world, success isn't measured in parts assembled or products shipped. Success occurs when our partners achieve their goals. It's an intimate approach to logistics that demands individual attention and personal ownership. It's how Hans Miedema brings Agility to supply chain challenges.
Hans Miedema
Regional Support Leader,
Agility Global Account Team
agilitylogistics.com
Agility
A New Logistics Leader



A NEW MODEL T: THE TOYOTA PRODUCTION SYSTEM

As transportation became faster and more reliable through the mid-20th century, and consumerism's grip on society tightened, businesses were tasked with the recurring challenge of creating a workflow that could match marketplace velocity and expectations. Ford, despite his otherwise clairvoyant approach to engineering a cross-enterprise manufacturing setup that satisfied mass-market interest in the automobile, became a victim of his own design. The speed of transport, the pace of technological change, and shifting consumer discretions and demands inevitably outdistanced the "man and his model."

Ford saw the bigger picture within the development of his company's enterprise–its diversification and control over the means and resources of production and transportation. But as time progressed, the Ford production model grew too rigid in addressing and accommodating design and manufacturing flexibility, the empowerment of the laborer, and the invariable need to scale fluctuating demand to supply. Where Ford left off, Taiichi Ohno and the Toyota Production System picked up in both theory and execution.

The production philosophy that Ohno and others at Toyota Motor Corporation pioneered in post-World War II Japan was born of Ford Motor Company's ideology as well as its inevitable inflexibility and obsolescence.

Ohno's influential work, *The Toyota Production System: Beyond Large-Scale Production* (1978), shares his admiration of Ford's world-changing vision and specifically his idea of standards and their application across and beyond the manufacturing facility.

"Tracing the conception and evolution of work flow by Ford and his associates, I think their true intention was to extend a work flow from the final assembly line to all other processes – from machine processing to the die press that corresponds to the earlier processes in our Toyota system," Ohno writes.

But his conjectures of how Ford's theory and practice might have evolved are

merely that–conjectures. After Ford's death, the company remained fixed to the company line–the assembly line–and increasing competition from U.S. automotive manufacturers such as General Motors, then Toyota, brought to the surface problems inherent in the Ford production model.

As candid as Ohno was in crediting Ford's vision and business philosophy, he was equally critical of the path Ford Motor Company followed after its meteoric rise. One problem he cited was the company's myopic compulsion to push the manufacturing and assembly flow to accommodate larger lot sizes and meet increasing demand.

"Ford's successors misinterpreted the work flow system," Ohno writes. "The final process is indeed a work flow, but in other production lines, I think they were forcing the work to flow."

In addition to not having the operational flexibility to accommodate part and product variation within its manufacturing process, Ford Motor Company didn't have the conceptual understanding of how it might address these stopgaps and input human intelligence into the automation process–an idea that Ohno picked up on and pioneered himself.

In fact, when Toyota executives visited the United States in the early 1950s to tour and observe automotive manufacturing facilities and operations, they were less than impressed. Instead, it was the U.S. supermarket phenomenon that caught their attention and served as inspiration for a new JIT model.

Ford's ideas on time and waste became the underlying influence of Ohno's own attempt to devise a system that would strive for "the absolute elimination of waste"–in terms of inventory, time, and cost. But he approached this task from a vastly different cultural and business objectivity.

Following World War II, Japan was very much a mirror of U.S. manufacturing ideology. The United States served as a model for Japanese industry to study and adopt as it projected a new economic reckoning following the war's devastating circumstances.

The president of Toyota at the time, Kiichiro Toyoda, challenged employees to "catch up with America in three years."

"Ford's successors misinterpreted the work flow system. The final process is indeed a work flow, but in other production lines, I think they were forcing the work to flow."

– Taiichi Ohno

This motivation served as the impetus for Ohno and his colleagues to shop around American automotive manufacturing facilities–and supermarkets – for ideas they could extract to rebuild the company and the country's prospects.

At that time, Toyota was in the midst of a financial crisis, so change was welcome and necessary.

"The company and its bankers believed that the answer was to reenter the car market," observes Linge. "Its options, like those of other Japanese vehicle manufacturers, were constrained by the fact that the domestic market, although very small in the early 1950s, was nonetheless demanding an increasing variety of vehicle types and optional extras.

"The solution was to turn away from the 'just-in-case' approach that had been adopted in U.S. car plants because this necessitated holding large inventories of all components to allow for breakdowns, defects, or an unexpected demand for a particular model," he notes.

FROM CRISIS TO ADVANTAGE

Toyota's executives, and Ohno in particular, recognized that changing consumer dynamics within Japan required a system that was scalable, flexible, and markedly different from the manufacturing status quo. In some ways, Toyota's crisis presented an advantage.

"Taiichi Ohno, when creating the Toyota Production System, took a different point of view," says John Seddon, a UK management consultant. "The 'make or buy' debate among American manufacturers struck Ohno as irrelevant. The real question, he thought, was how suppliers and assemblers could work together. If they could work in a smooth, cooperative way, costs would reduce and quality would improve. His approach was that the parties should not 'trade on cost' but instead work together on 'the causes of cost.'"

While much of Japanese industry continued to implement Ford's "few SKU" mass production model, Toyota began moving in an entirely different direction–and the U.S. supermarket presented an unlikely model to follow.

Toyota executives drew inspiration from watching how U.S. supermarkets restocked inventory to match consumer buying habits and frequencies. These methods served as an appropriate design for the type of pull process Ohno envisioned to enhance and facilitate real workflow.

"A supermarket is where a customer can get what is needed, at the time needed, in the amount needed," Ohno writes. "Sometimes, of course, customers may buy more than they need. In principle, however, the supermarket is a place where we buy according to need. Supermarket operators must make certain that customers can buy what they need at any time."

The supermarket inventory system presented a perfect example of the convergence of supply and demand. From this, Ohno conceptualized the customer in different stages of the manufacturing process, and therefore addressed shifts in demand, observes Mark Spearman, former professor of industrial engineering and management sciences at Northwestern University and current CEO of Factory Physics, a Bryan, Texas-based management consulting company.

"At Toyota, each process became both a supermarket for downstream processes and a customer to preceding processes. Consequently, the lead time in a pull system is zero. Either the item is available or it is not," he writes.

In this manner, automobile parts and components throughout the manufacturing network could essentially be withdrawn and replenished according to sequential demand. This pull system enabled Toyota and Ohno to reevaluate, then reengineer the work flow process to accommodate the manufacturer's expanding product profile and growing demand for different types of automobiles.

KANBAN: PERSONIFYING DEMAND VISIBILITY

The anchor for Ohno's JIT system was the utilization of kanban or "tag," which he described as a "simple or direct form of communication always located at the point of where it was needed."

In the 1950s, Toyota Motor Corporation's manufacturing plants began testing and adopting Taiichi Ohno's Toyota Production System. Facilities such as the Motomachi plant (seen here in 1959) started using kanban to withdraw and replenish parts according to demand.


FLS US
US Truckload
FLS CN
Canadian Truckload
FLS XB
Cross Border Truckload
FLS RF
Refrigerated Truckload
FLS FB
Flatbed Truckload
FLS LT
Less Than Truckload (LTL)
FLS AO
Air & Ocean
FLS IM
Intermodal
FLS ES
Expedited and Specialized
FLS FM
Freight Management
FLS &U
Transportation tailored to YOUR needs.

To ensure that product flow remained fluid, kanban essentially became a demand signal – often in the form of cards and later used with carts and bins – that included information about what parts were needed and which parts should be assembled.

"In the just-in-time method, a later process goes to an earlier process to withdraw needed goods, when and in the quantity needed. The earlier process then produces the quantity withdrawn. In this case when the later process goes to the earlier process to pick up, they are connected by the withdrawal or transport information, called *withdrawal kanban* and *transport kanban*, respectively," Ohno writes.

Quite simply, kanban was used to communicate and forecast demand, on demand–from the final assembly line all the way back through the supply line to raw material procurement.

One inevitable challenge of this reengineered work flow, however, was figuring out how to handle inventory spikes later in the manufacturing process that would invariably throw earlier processes out of sync.

Toyota's practice of "production leveling" helped alleviate some of these problems by creating a more manageable and continuous flow– preventing sudden fluctuations in demand and batching of inventory. Instead of manufacturing one model successively, the plant would spread out production of different models over a longer period of time, and flatten demand and inventory spikes throughout the entire manufacturing, assembly, and procurement setup.

"Toyota's final assembly line never assembles the same automobile model in a batch. Production is leveled by making first one model, then another model, then yet another," writes Ohno.

By producing smaller lot sizes over longer periods of time, Toyota could proactively control upstream inventory flow. But this sophistication, by necessity, required a different approach to setting up manufacturing dies and presses to quickly switch from one product to another. In the 1940s it took Toyota two to three hours to change setups; by the 1970s it was down to mere minutes. The key to building flexibility into the automation process, Ohno discovered, was injecting human intelligence.

> "At Toyota, each process became both a supermarket for downstream processes and a customer to preceding processes. Consequently, the lead time in a pull system is zero. Either the item is available or it is not."
>
> – Mark Spearman, CEO, Factory Physics

AUTOMATION WITH A HUMAN TOUCH

While JIT (kanban and production leveling) became one pillar of Ohno's vision, the empowerment of the factory employee, or what he termed autonomation (automation with a human touch) evolved as the second critical component.

In this regard, Ohno's and Ford's thinking were completely at loggerheads. Ford employees existed as primarily automatons in low-skill roles, tasked with producing mass quantities of high-volume parts. By contrast, Toyota empowered its employees to be more flexible, creative, and adaptive – working in teams and monitoring multiple production processes of low-volume, highly customized components. This conception of labor management provided the layer of quality assurance that came to typify the Toyota Production System.

"The link between quality management and JIT is well understood," write Barbara B. Flynn, Sadao Sakakibara, and Roger G. Schroeder in their paper, *Relationship between JIT and TQM: Practices and Performance*.

"Quality management activities provide support for JIT through establishment of a process that is in control," they continue. "This facilitates the development of an unhampered flow of goods through the process, and allows buffer inventory reduction. The provision of accurate and timely feedback about the manufacturing process permits shop floor personnel to detect, diagnose, and remedy process problems as they occur."

Diverging from Ford's wage motive, Ohno required Toyota plant workers to manage several processes at once. This transition, like the implementation of the kanban system, took time to test, adapt, and roll out within Toyota's manufacturing facilities. It also met resistance from workers who felt threatened by potential downsizing, a reality Ohno reflectively acknowledged would have made the Toyota Production System incompatible with American labor unions of that time.

Even at Toyota, it took nearly 15 years to fine-tune both the kanban system and the autonomated line to where it could be exported to supplier facilities.

While Ohno developed autonomation of his own accord, the operational

Taiichi Ohno's idea of autonomation augmented the role of assembly-line workers. Using automatic control mechanisms to identify abnormal situations, workers could stop production, initiate fixes, and maintain work flow.

technology necessary to implement such a scheme was developed by Toyota's textile operations–where Ohno worked earlier in his career. The idea of intelligent machining came from the auto-activated weaving machine, which was invented by Sakichi Toyoda, the founder of Toyota Motor Corporation.

"The loom stopped instantly if any one of the warp or weft threads broke. Because a device that could distinguish between normal and abnormal conditions was built into the machine, defective products were not produced," writes Ohno.

Over time these technological modifications were applied to the manufacturing and assembly line processes to create automatic control mechanisms that could address problems and errors immediately, without impacting workflow and productivity.

In this manner, the Toyota Production System and its two primary pillars–JIT and autonomation–evolved as both a means and an end. They were inherently linked within the process and the very process itself ensured continuous flow (kaizen) and defect elimination (baka-yoke).

When the system matured to the point where Toyota could take it to suppliers, it presented a revolutionary model for how demand-driven logistics might evolve.

Where Henry Ford consciously created standards that could be transferred within his own manufacturing facilities to mass-produce parts and automobiles, Ohno took it one step further by creating a workflow process that could transcend the manufacturing plant–and ultimately the supply chain.

BREAKING THE MOLD

Henry Ford and Taiichi Ohno's conceptions of JIT and lean inventory strategies defined the manufacturing paradigms of their times. More importantly, their respective visions opened new vistas for where demand-driven logistics could evolve and grow.

The context of when and where Ford Motor Company and Toyota brought these ideas to the factory floor limited how far they could go.

Both worked closely with their suppliers, streamlined their networks, and created altruistic relationships with partners to drive their JIT systems and control the flow of products through the manufacturing process. But Ford owned and controlled many of these sources. His strategy, according to Seddon, was "effectively controlling the market in as much as it controlled business-to-business relationships."

SETTING THE STANDARD

IN ON TIME DELIVERY.

You already know we are the safest, cleanest, and most fuel efficient mode of transportation. What you may not know is we are one of the most reliable modes of transportation as well. If you ship by rail today, you need to consider a water alternative with ACL.

See how our leadership in on time barge delivery can eliminate the cost, delays, and complications of moving your cargo by truck or rail. Contact Michael P. Ryan, Senior VP, Sales and Marketing at 1-812-288-0295.

ACL
American
Commercial Lines
www.aclines.com NASDAQ: ACLI

Taiichi Ohno went one level deeper by purposefully reaching out to suppliers and giving them incentives to work more collaboratively–within the parameters defined by the Toyota Production System. But Toyota, too, was largely confined by its vertically integrated business relationships (keiretsu) with suppliers.

Consequently, neither Ford Motor Company nor Toyota had to tackle transportation to the extent that businesses today do. Managing inbound processes within these finite loops was relatively easy to accomplish once management bought into the idea. With Ford this was a given; for Taiichi Ohno it took a little more time.

A NEW PERSPECTIVE

By the late 1970s and early 1980s, U.S. businesses began looking at what Ford and Ohno envisioned through the lens of a new scope. Increasing globalization, emerging transportation sophistication, and the pervasive impact of communication technology expanded trade opportunities beyond existing thresholds. The idea of a "supply chain" comprising myriad points of supply, many more points of consumption, and an infinite number of touchpoints in between, required a new way of looking at managing global transportation–and matching demand to supply.

Within this emerging dynamic, the Ford JIT model and the Toyota Production System sparked new ideas and justifications for following demand signals and managing inbound transportation. But it wasn't a linear process. For some companies it was purely driven by cost economies; others saw it as a means to dig deeper into their supply chains to reduce inventory; fewer still saw an opportunity to create a nexus for change by breaking down silos and integrating functions across and beyond the enterprise. In a variety of ways, businesses embraced these ideas and ran.

Together, Ford and Ohno broke the mold for demand-driven logistics. But, they did not break the barrier. Rather, they positioned themselves and others to take the next leap.

Where Henry Ford addressed the JIT requirements for mass production of the Model T, the Toyota Production System created a paradigm for producing smaller lot sizes of many more vehicle models—a standard that manufacturers still use today.

WORKS CITED:

Flynn, Barbara B., Sadao Sakakibara, and Roger G. Schroeder. **Relationship Between JIT and TQM: Practices and Performance.** The Academy of Management Journal 38 (1995): 1325-1360

Ford, Henry, and Samuel Crowther. **Today and Tomorrow.** Portland: Productivity Press, 1988

Linge, G.J.R. **Just-in-Time: More or Less Flexible?"** Economic Geography 67 (1991): 316-332

Ohno, Taiichi. **Toyota Production System: Beyond Large-Scale Production.** Portland: Productivity Press, 1988

Pietrykowski, Bruce. **Fordism At Ford: Spatial Decentralization and Labor Segmentation At Ford.** Economic Geography 71 (1995): 383-401

Raff, Daniel M.G., and Lawrence H. Summers. **Did Henry Ford Pay Efficiency Wages?** Journal of Labor Economics 2nd ser. 5 (1987): 57-86

Seddon, John. **Partnering—a Four Part Series on Partnering and Systems Thinking.** Vanguard Education Ltd. Buckingham: Vanguard Education Ltd. 04 Jan. 2008

Spearman, Mark L. **Customer Service in Pull Production Systems.** Operations Research 40 (1992): 948-958

THE EVOLUTION OF INBOUND LOGISTICS

INBOUND'S EARLY ADOPTERS:

SURVIVAL OF THE FITTEST

It is said that mutation drives evolution. For decades, the practice of traffic management was largely push-driven. But during the 1970s, something happened. For a few practitioners, the flow of transportation changed direction, going exactly the opposite way. Push mutated into pull. Soon after, Inbound Traffic Guide magazine materialized, recognizing the paradigm shift from traditional push-oriented ideas.

Following demand signals, controlling inbound transportation, and targeting the needs of the stateside consignee were heretical concepts that defied prevailing business orthodoxy–transportation and purchasing departments making decisions in silos. But the time was ripe for counter-cultural thinking.

The 1980s marked the beginning of the transition from the industrial age to the information age. This was the leading edge of a new, rapid technological era, auguring the mainstream acceptance of computerization and globalization.

Deregulation of the airline, motor carrier, and railroad industries created an environment of increased competition, paving the way for new market entrants. This influx of new blood, and the development of innovative technologies, provided incentive and opportunity for transportation, warehousing, and distribution companies to differentiate themselves, push the envelope in developing value-added services, and compete for business in new, counter-intuitive ways.

These forces also unshackled the shipper community by giving them more creative options for moving product across modes and around the world.

WHAT'S IN A NAME?

As the merits of demand-driven logistics grew, the name of this magazine evolved as well. The evolution of our name and tagline reflects the evolution of our readers:

1981 *Inbound Traffic Guide* debuts, with the tagline: *For industrial buyers of transportation*.

1985 The magazine changes its name and tagline to *Inbound Logistics*: *For transportation and purchasing professionals*. For the first time, the contribution of purchasing managers and the wider concept of logistics is recognized.

2008 Regardless of title and function, accepting "demand-driven" is an enterprise-wide commitment. Thus the current tagline: *The magazine for demand-driven logistics*.

THE EVOLUTION OF INBOUND LOGISTICS

A timeline of inbound logistics

THE 1970s

1978 Airline Deregulation Act

1978 The original Japanese edition of Taiichi Ohno's *Toyota Production System: Beyond Large-Scale Production* is published

1979 Energy crisis hits

Consequently, the idea of third-party logistics providers capable of helping businesses expand control of their transportation and distribution operations–domestically and globally–began to take hold, setting in motion a supply chain reaction that reverberates loudly today.

In 1989, the fall of the Berlin Wall served as both a literal and symbolic reminder of increasing free trade, emerging consumer economies, and new offshore targets for enterprising U.S. businesses. At the same time, stateside consumers became increasingly captivated by low-priced quality imports, forcing U.S. manufacturers to look farther afield for less-expensive sourcing and manufacturing locations. By 1990, globalization was in full swing.

> "We have regarded transportation information as your primary need since our inception. Now, we are broadening our editorial content to cover transportation as it relates to other industrial functions. 'Logistics' describes more aptly the inbound transportation buyer's broadened responsibilities."
>
> – *Inbound Logistics*, July 1985, name-change issue

Recognizing these changes, *Inbound Traffic Guide* magazine broadened its editorial scope and changed its name to *Inbound Logistics*. Why?

It was a matter of cause and effect, according to the editor's letter in the July 1985 name-change issue: "We are broadening our editorial content to cover transportation as it relates to other industrial functions. 'Logistics' more aptly describes the inbound transportation buyer's broadened responsibilities."

Why inbound logistics? That same question has served as both mission statement and dangling carrot for believers and skeptics alike during the magazine's 27-year history. Gradually "why" was replaced by "how," as the reason and rationale behind "demand-driven logistics" became evident in the innovative ways transportation and logistics service providers and practitioners envisioned and approached supply chain management. *Inbound Logistics* magazine, and the theory and practice of inbound logistics, grew as these tales of change surfaced.

TRACING THE LEGACY

The case studies we have pulled, probed, and published since our inception serve as important mile-markers for the evolution of inbound logistics. Tracing this legacy entails turning back some pages, and turning over some old stones.

From our archives we have selected articles that show the progression of inbound logistics from early adoption to mainstream recognition. These snapshots illustrate demand-driven best practices across myriad industry verticals, disciplines, and even literary genres. As we have purposely left them in the context of their time, these articles illustrate how adopting demand-driven practices helped business logistics managers cope with global, economic, and technological changes.

Demand-driven logistics and, in turn this magazine, have evolved as change agents–exposing the deficiencies of siloed decision-making, while expounding the efficacies of cross-functional activity and collaboration within and beyond the four walls of the enterprise. This vision is apparent in the following articles.

So to answer the lingering question why inbound logistics?...turn the page.

A timeline of inbound logistics

THE 1980s

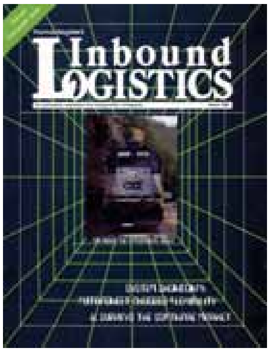
	Decade begins with U.S. economy in recession
1980	Staggers Rail Act and Motor Carrier Act of 1980 are passed
	Inbound logistics gains growing acceptance–companies begin understanding the importance of specifying inbound transportation. Transport carriers start selling to the consignee
1981	First demand-driven magazine–*Inbound Traffic Guide*–is published
	Electronic data interchange (EDI) standards emerge
	Software applications for managing transportation are introduced
1982	UPS begins Next-Day Air Service
1985	*Inbound Traffic Guide* evolves into *Inbound Logistics*
	Transferring data via fax machines gains widespread use
	Third-party logistics providers (3PLs), outsourcing, and "value-added" services emerge
1988	The first English translation of Taiichi Ohno's *Toyota Production System: Beyond Large-Scale Production* is issued; Henry Ford's *Today and Tomorrow* is re-released to commemorate the company's 85th anniversary
1989	Fall of the Berlin Wall
	Decade ends with U.S. economy in recession

MARCH, 1987

A Systems Decision Spurs NutraSweet Dreams

Transportation management systems (TMS) have necessarily evolved with the needs of shippers and consignees, and today they feature a laundry list of functions and vertical-specific capabilities. But 20 years ago the idea of a "computerization system" that simply aggregated freight billing information and provided intra-enterprise visibility to that data was a remarkable breakthrough for companies such as NutraSweet.

When the Food and Drug Administration (FDA) finally approved NutraSweet for consumer use in 1981, following a lengthy 17-year process, it created a welcome, if daunting, task for the sugar substitute producer–figuring out how to catch up with a backlog of demand. This challenge became even more complicated as the FDA began approving more uses for NutraSweet in applications such as carbonated beverages.



To meet this escalating demand, by 1986 NutraSweet was operating three facilities in the United States–two that manufactured product and one that supplied ingredients to one of the plants. At each facility, the company had one person responsible for managing inbound transportation.

"Everyone had experience, did a good job, and got competitive rates," says Carol Linnean, NutraSweet traffic analyst. "But no one knew what anyone else did, how he or she did it, and why carriers were chosen. There was no common vehicle–except the telephone–with which to communicate."

As a result, the company was inefficiently using its $5-million transportation budget, leaving about $100,000 in carrier discounts on the table, according to Linnean. "We were not able to see transportation as a complete picture," she says.

So Linnean began looking for a computerized system that could manage the transportation function, and specifically control inbound and outbound costs.

After a lengthy search and much due diligence, which included input from various departments, NutraSweet selected CITIPRO, a transportation system manufactured by Citicorp Management Logistics, to aggregate information and coordinate communication among its three facilities.

By automating freight payment and creating an electronic portal for transmitting shipment information via IBM's information network, the CITIPRO system enabled NutraSweet's three facilities to have visibility into the entire transportation network. And the advantages were quickly evident, observes Patricia Frakes, superintendent of receiving and distribution at NutraSweet's Augusta, Ga., plant.

"A Midwest motor carrier recently opened a terminal in Augusta. I was able to negotiate a 40-percent discount with them," she says. "The CITIPRO system lets me transmit that information to its database so that my colleagues at the other NutraSweet plants can enjoy the same discount.

"In the past each plant fended for itself," Frakes adds. "Now we can see what the other plants are doing."

A timeline of inbound logistics

THE 1990s

U.S. economy in recession

1990 Persian Gulf War

1991 End of the Cold War

Globalization explodes

"Wal-Mart effect" brings supply chain consciousness to mass retailers and the public

The Internet arrives

1994 The North American Free Trade Agreement (NAFTA) takes effect

1995 The World Trade Organization (WTO) is founded

1995 Amazon.com launches, heralding a new era in e-commerce

1995 FedEx makes inroads into China

The 3PL and expediter markets grow

Technology proliferates with the emergence of IT companies such as SAP, i2, and Oracle

The dot-com bubble expands, then bursts

Cell phones gain widespread use

JULY, 1992

From Pier to Plate in 36 Hours

Integrating purchasing and transportation functions are key components of managing inbound. When quality concerns became problematic for Red Lobster, it took back control of purchasing and found a transportation partner that was up to the task.

In 1981, Red Lobster began introducing fish into its restaurants by allowing individual franchises to source "fresh catch" locally. In so doing, the company lost control over the consistency and quality of product its restaurants were serving.

To rectify the situation, Red Lobster organized a national purchasing program out of its Orlando, Fla., headquarters, using a regional supply distributor to make weekly deliveries. This way, restaurants could call in their supply needs to Red Lobster's Orlando office; then management could place orders with approved suppliers and use regional supply distributors to make weekly deliveries by truck.

In time, however, this over-the-road inbound system did not allow the company to quickly or efficiently scale supply according to need–for example, delivering West Coast catch to East Coast restaurants in case of a shortage.

Red Lobster then turned to Emery Worldwide and its dedicated network of planes and ground fleet to expedite fish shipments twice a week via air, so that shipments arrived in restaurants in less than 36 hours from point of origin.

With the new inbound system, restaurant managers still maintain control over what they order and corporate management retains control over suppliers and product quality. With the rollout of a new Electronic Data Interchange (EDI) system to facilitate order fulfillment from restaurants to vendors, and plans to integrate this system with Emery's network, Bob Joseph, director of purchasing for General Mills, Red Lobster's parent company, envisions a future of paperless billing that will likely surpass the $100,000 savings already achieved by eliminating key-punch order-taking.

A timeline of inbound logistics

THE 1990s

FEBRUARY, 1994

The Picture of Health

When election time rolls around, health care reform is a hot-button topic that receives lots of attention–and few results. But 14 years ago, New York City's St. Luke's-Roosevelt Hospital took it upon itself to become a model for reform. Partnering with an outsourced logistics provider to manage inbound delivery of medicine and supplies became the perfect band-aid for swelling operational costs.

Until a year ago, the materials management system of Manhattan's St. Luke's-Roosevelt Hospital Center, the nation's fifth-largest hospital, lagged way behind its high-tech diagnostic and therapeutic capabilities.

Getting hospital people and logistics people to be partners was a big challenge. But with the assistance of third-party logistics provider GATX Logistics, that's just what St. Luke's-Roosevelt did. And in the process it saved $2.5 million in annual spend.

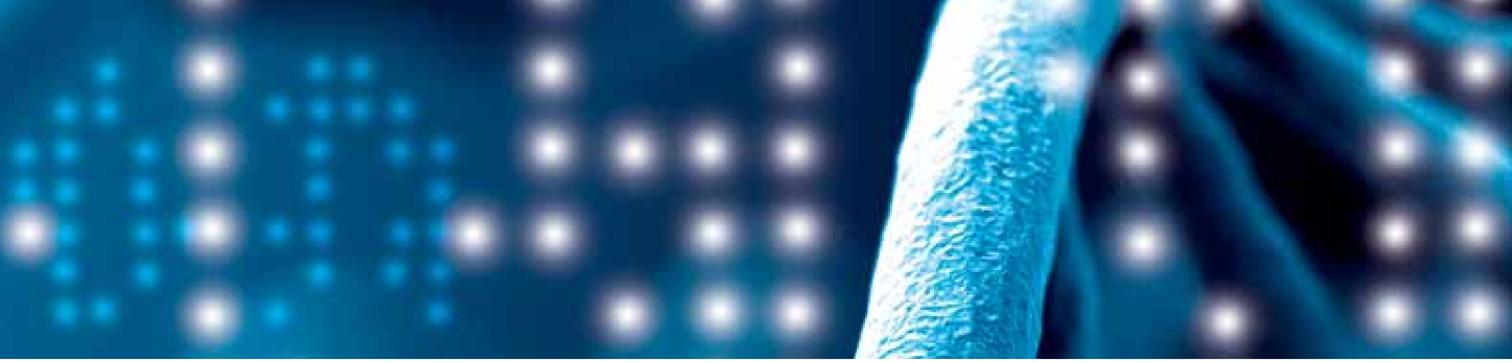
From the beginning, the hospital decided to use a professionally managed off-site distribution center to provide efficient delivery of thousands of different items directly to nurse's stations, operating rooms, and laboratories at its two hospital sites.

At the time, only 30 percent of ordering was being handled through the office channels of general supply and central stores. Nearly 11,000 items were ordered independently by nursing stations. Supplies were hoarded and no accurate aggregate purchasing information existed. Fully $600,000 worth of inventory was unaccounted for annually and 20 trucks a day crowded the hospital's receiving and loading docks.

GATX Logistics immediately came in and revamped the hospital's entire process, implementing a two-bin inventory system within the hospital, while taking over management of a new warehouse and distribution center in the Bronx and equipping it with necessary carousels, conveyors, forklifts, racks, and bar-code readers and scanners.

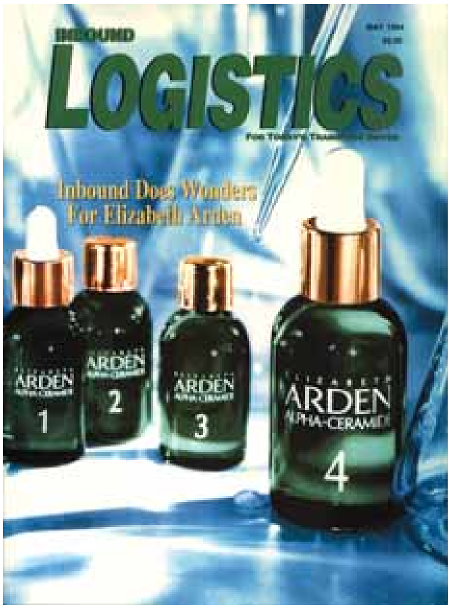
Now, hospital workers use bar-code technology to record their replenishment needs. With demand signals from the hospital coming into the distribution support center, GATX's software batch-processes the aggregate of orders, compares it to the inventory on the pick line, and if necessary, releases additional inventory from bulk storage. It also calculates the number of totes needed to pack each hospital location's supplies. Then four to five trucks make daily deliveries to the two hospital sites.

Taking the sophistication of the warehouse to the hospital has given St. Luke's-Roosevelt greater visibility and control of inventory, while reducing costs, increasing efficiency, and creating better morale among hospital staff.



MAY, 1994

Elizabeth Arden's Wrinkle In Time



Evolving communication and data integration technologies continue to facilitate how global businesses manage their supply chains. In 1994, however, a lone fax machine was the IT enabler that led Elizabeth Arden to radically change its domestic inbound transportation program.

Deep in the historic Shenandoah Valley, Elizabeth Arden manufactures youth preserving skin-care products, cosmetics, and perfumes customers count on to ease the ravages of time and enhance beauty. Meanwhile the company's logistics managers have created a time machine of their own.

It runs on the power of a humble fax machine and racks up annual million-dollar savings by streamlining domestic and international inbound programs, while expediting delivery of chemical raw materials, glass, cardboard packaging materials, and some finished goods from New York and Europe to its manufacturing facilities in Roanoke, Va., and Puerto Rico.

The idea of using a fax to aggregate and control its inbound logistics program was born out of a simple desire to cut costs, says T.M. "Mickey" White, transportation manager for Elizabeth Arden.

In 1990, Elizabeth Arden's transportation and purchasing staff identified an opportunity to streamline inbound transportation between a cluster of vendors in the New York City area and its manufacturing facility in Roanoke. Local carriers welcomed the idea when they realized they could eliminate deadhead moves by being more flexible in meeting the cosmetics company's needs.

Elizabeth Arden replaced much of its use of less-than-truckload (LTL) carriers with two truckload (TL) carriers. As a result, in 1993 it consolidated what would have been 2,760 LTL pickups into 976 truckloads. Those shipments, plus an additional 3,418 LTL shipments, 692 truckloads, and 77 air shipments translated into 32 million pounds of inbound freight.

"We want to be able to control our shipping. If the customer is going to be satisfied, this is one element that is important to me."

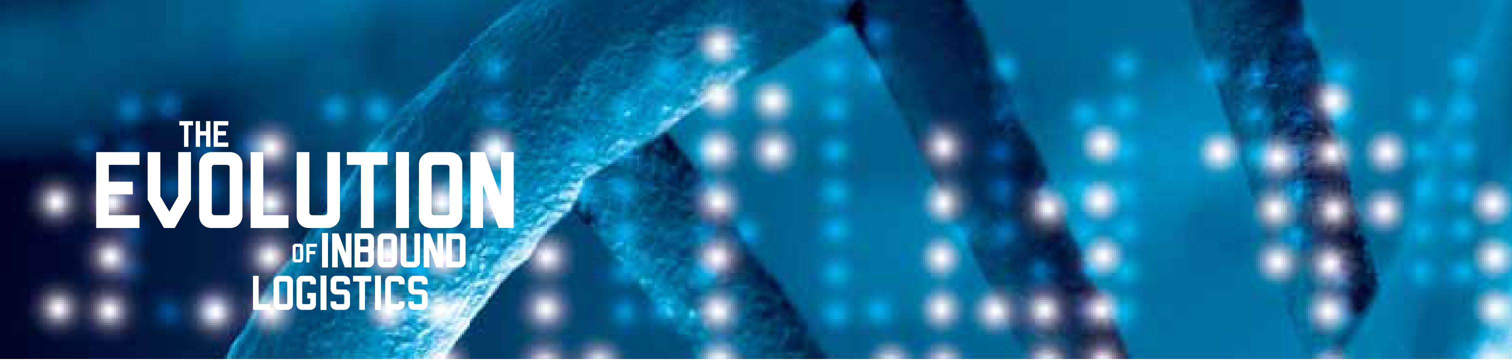
— Karen Rubenstein, purchasing agent for raw chemical ingredients, Elizabeth Arden

The fax machine became a critical part of this consolidation transformation. Creating a standard form that specified necessary shipment information allowed vendors to fax documentation rather than phoning it in.

This shift in operating procedure was not without growing pains, however, as some carriers and vendors resisted the new process.

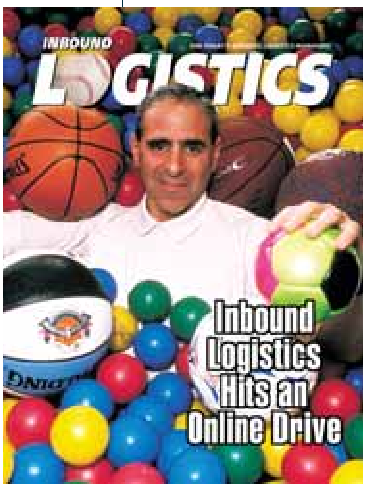
Karen Rubenstein, purchasing agent for raw chemical ingredients, tells suppliers that as a customer, she wants good service. "We want to be able to control our shipping. If the customer is going to be satisfied, this is one element that is important to me." In turn, some suppliers had to accommodate Elizabeth Arden's needs by changing their own manufacturing and warehousing systems. But the learning curve has flattened as vendors become used to the requirements.

On the domestic side alone, Elizabeth Arden has saved upwards of $500 per truckload, or $450,000 annually. And now, thanks to this success, the company is using a freight forwarder to consolidate inbound shipments from Europe as well. All because of a fax machine.



A timeline of inbound logistics

THE 1990s



NOVEMBER, 1998

Internet Logistics Hits an Online Drive

In its early years, the Internet gave retailers a whole new perspective on how to connect demand with supply. A novel marketing idea, sound understanding of inbound logistics and supplier management, and a knowledgeable logistics partner helped Justballs! create something out of seemingly nothing.

When Jim Medalia decided to launch an Internet retail store selling sports balls to coaches, recreation departments, and consumers worldwide, logistics was a priority. With no warehouse or retail store, Justballs! was the consumer-facing link between supply and demand.

The online ball shop owns and manages its own inventory but leaves the task of operating a warehouse to its outsourced logistics provider. With a pedigree in call center and fulfillment operations in the catalog industry, the Jay Group was well prepared to meet Justballs! growing inventory management and distribution needs.

"Currently we have approximately 800 SKUs–about 15,000 units. Because we just opened, our days of supply are minimal. Inventory will be driven in the future by demand at an individual SKU level, and by interaction with our suppliers," says Joe Ruggear, vice president of logistics.

Necessarily, controlling inbound and letting demand dictate supply requirements are critical to the growth of Justballs! business.

"Inbound logistics first gives us the ability to forecast customer demand and to share this information with our suppliers. Second, good inbound logistics management lets us reduce response time from suppliers, allowing for quicker replenishment and fulfillment," Ruggear says.

The Jay Group's competency in managing inventory and transportation dovetails well with Justballs! management of the supply side. For the customer this collaboration is anything but transparent.

When visitors log into the web site, a simple search engine makes finding the right product for the right person an easy task. Then when they want to purchase an item they can electronically submit their order.

Justballs! management picks up orders twice a day, and batches them to the Jay Group, where the orders are matched with inventory in the system. Items are then picked, packed, and shipped. Once the tracking number is created, the customer is charged and receives an email confirmation of the shipment.

Currently, Justballs! order fulfillment is exceeding its ship-within-48-hour service commitment to buyers, but its future goal is to become even faster.

"We want information to move instantaneously from the point of ordering to the fulfillment center, then back to the customer with tracking number and confirmation. This ultimately means quicker service," observes Medalia.

"It will be an evolution to totally integrated, real-time information sharing with our suppliers," he says. "The total process will be integrated from web site to order management to fulfillment and customer database management."

THE EVOLUTION OF INBOUND LOGISTICS

A timeline of inbound logistics

THE 2000s

Instantaneous communication offered by email, Internet, and satellites drives globalization

Supply chain management and logistics excellence converge

Emergence and growth of RFID

Universities begin offering supply chain management degrees and certificates, creating a career path in logistics

2001 Sept. 11 brings transportation security to the national consciousness, resulting in business interest in risk management and contingency planning

2003 The Iraq War demonstrates the military's improved control of inventory and asset visibility

Performance and quality standards such as ISO certification and Six Sigma gain widespread application

CEOs and Wall Street recognize and embrace supply chain management

Strikepoint: A Logistics Tale

By Daniel Pollock

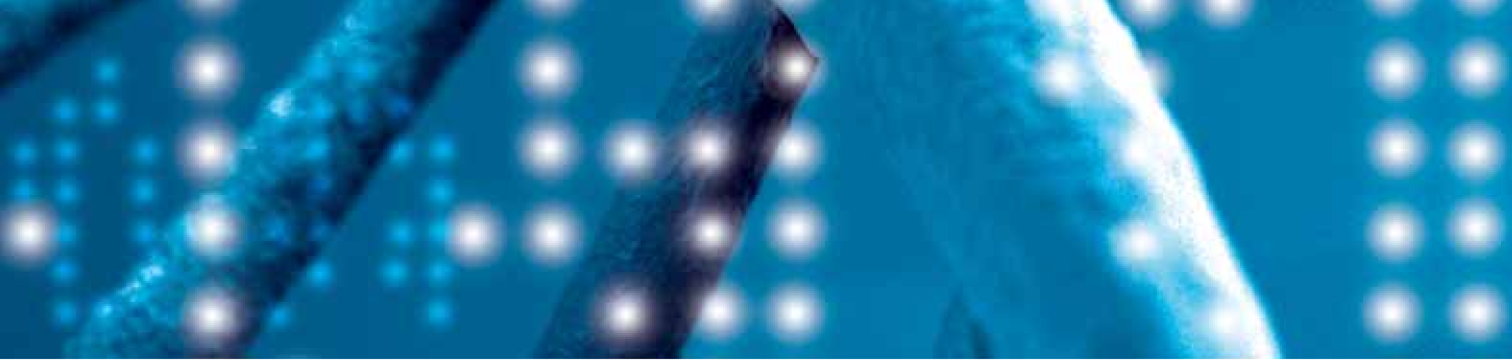
The trials and travails of Gan McManus' fictional attempt to save his company and his job by meeting an unprecedented spike in demand for Cornelius footwear was the convergence of fantasy and reality. The overwhelming response we received from readers was proof positive that Gan's real-world peers appreciated the challenges and accomplishments of his heroic undertaking.

Faced with sudden, unprecedented demand for its product, a staid company taking an antiquated approach to transportation gets a clue just how important world-class logistics can be. There isn't much an 11th-hour conversion to logistics best practices can do now to beat the odds on this "bet the company" gamble...or is there?

Why should you spend your time reading fiction? Because *Strikepoint* is a celebration of your job. It shows how crucial logistics can be as a change agent, or at least as a way to successfully meet an opportunity crisis. In many companies, logistics is relegated to obscurity. This story highlights just how important logistics is, and how important your efforts are.

Strikepoint was a long time in the making. About 10 years ago, *Inbound Logistics* editors had the idea to write the "Great American Logistics Novel." Why? Because sometimes fiction is more accurate in its depiction of how frustrating and challenging logistics can be. As editors, we can't always get logistics managers and companies to reveal their inner workings and failings. Eventually, the Council of Logistics Management (now CSCMP) picked up on the idea and commissioned best-selling author Daniel Pollock to write such a novel, the logistics thriller *Precipice*.

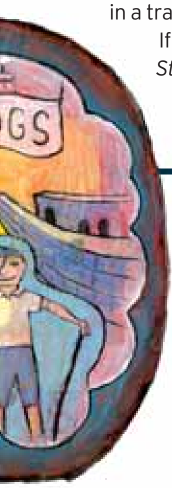
Drawing upon the success of *Precipice*, we were lucky enough to interest Pollock in writing a logistics novella exclusively for *Inbound Logistics* readers. Pollock, a former



JUNE, 2001

editor with the Los Angeles Times Syndicate and author of the novels *Lair of the Fox*, *Duel of Assassins*, and *Pursuit into Darkness*, spent many months talking to readers and industry experts to accurately depict the challenges, joys, and frustrations of your vocation. *Strikepoint* was written to celebrate your job in a way never seen in a trade magazine before.

If you haven't already, give *Strikepoint* a read yourself: www.inboundlogistics.com/strikepoint



SEPTEMBER, 2003

From Factory to Foxhole: The Battle for Logistics Efficiency

Historically, logistics has been used to describe the supply, movement, and support of military operations—and modern business has learned a lot from this legacy. Today, the military is taking a page from the private sector as it develops customer and supplier partnerships to support its troops.

The ongoing transformation of military logistics has significantly extended and transformed the supply chain. Rather than focusing on traditional port-to-port capabilities, today's military logisticians are getting up to speed thanks to savvy leadership, forward-thinking supply chain initiatives, and best-in-class technology.

In many ways, commercial supply chain managers and military logistics professionals are tackling similar challenges. Some major differences, however, make the military effort more complex and urgent. "Profit is not our bottom line," explains Allan A. Banghart, director of enterprise transformation for the Defense Logistics Agency (DLA) and a 30-year Navy veteran. "It's the ability to perform in combat."

The DLA is the Department of Defense's (DoD) largest combat support agency, providing worldwide logistics support to the military services, several civilian agencies, and foreign countries. As elsewhere in the U.S. military, the DLA is undergoing major change.

The DLA supplies all the food, fuel, and medical supplies as well as most of the clothing, construction materials, and spare parts for weapons systems for the forces remaining in Iraq during reconstruction. Two critical components of its transformation are ongoing improvements to customer relationship management (CRM) and supplier relationship management (SRM).

DLA's CRM efforts closely parallel those of a commercial company. "We are trying to add value to the warfighter by providing the right item in the right place at the right time and at the right cost – every time," Banghart says.

DLA's CRM initiative enables this goal. "The CRM effort is designed to provide us with the workforce, processes, and information technology tools to move from a transactional-based relationship to a personal, partnering relationship with the customer," Banghart explains. The initiative also helps DLA act as an integrated member of its customer's team.

On the supply side, its SRM initiative consists of two key components: strategic material sourcing and strategic supplier alliances. "DLA manages 5.2 million items, but 500,000 drive our business," Banghart says. Moving those 500,000 line items to long-term contracts means DLA can assure their availability, quality, and best value.

While these core items are competitively sourced, a number of products handled by DLA – such as tanks, airplanes, or weapons – have only one source.

"We need assured availability, quality, and best value for these items," says Banghart. As a result, DLA has initiated strategic supplier alliances with 30 key DoD sole-source providers.

A timeline of inbound logistics

THE 2000s

> "Demand-driven doesn't only refer to logistics; it is a corporate goal for Kodak."
>
> — Michael Cattalani, Kodak's manager of suppliers, logistics operations

JANUARY, 2007

Demand-Driven Logistics: Adjusting Focus

At its core, demand-driven logistics is a change agent. So when Eastman Kodak decided to restructure its business footprint and embrace the digital photography revolution, it took an inbound approach to leaning inventory and controlling transportation.

With 80 percent of its business drying up as traditional film made way for digital photography, Eastman Kodak found itself with a unique challenge and opportunity in 2003. Such massive market changes spurred the imaging product manufacturer to dramatically change its business model.

A key element of this transformation is Kodak's new supply chain strategy. As part of the company's plan to free up cash, Kodak decided to move to a demand-driven model, says Michael Cattalani, Kodak's manager of suppliers, logistics operations. "Demand-driven doesn't only refer to logistics; it is a corporate goal for Kodak," he says.

The goal was to reduce inventory and costs while increasing cycle times. Kodak met these goals, and others, including more effective dock door management and a more reliable, routine logistics structure.

The first leg of Kodak's demand-driven journey was developing a cross-functional team supported by executive management. "As we started the process, it became clear that we needed key representatives from every division—including manufacturing, purchasing, logistics, and supply chain – on the strategy team," says Ray Garbach, manager, materials management for Kodak.

One advantage was that senior managers "were willing to stick their necks out to improve Kodak's processes," says Garbach. "They also pressed us to establish a backup plan, which is mandatory in this environment."

Kodak produces materials in a nearly just-in-time fashion, so it was able to remove risk and fear from the supply chain, while also working with senior managers to develop contingency plans.

As part of its transition to a demand-driven supply chain, Kodak completely disassembled its less-than-truckload transportation with suppliers. Before, each supplier shipped its goods to Kodak plants.

Currently, Kodak consolidates supplier shipments by geography, making more frequent deliveries to the plants, and uses trucks containing material from multiple suppliers. In addition, it has standardized supply chain processes across the organization and across suppliers, allowing it to instantly spot abnormalities.

The company also implemented new crossdocking techniques. Instead of storing material not immediately needed on the floor, it is now crossdocked, and shipments to docks are scheduled. "While we bring goods in from suppliers to the crossdock once or twice a day, we spin out to the factory floor as many as five to seven times per day. This one additional step counteracts substantial steps – including unnecessary storage and retrieval processes – on the other side," says Garbach.

Kodak has seen dramatic improvements from its supply chain overhaul. The company has reduced cycle times by 70 percent in some areas, and has taken inventory out of the system.

CHOOSING INBOUND:
NATURAL SELECTION

by Lisa Harrington

For years, consultants, service providers, and educators have touted the benefits companies can achieve by taking control of their inbound supply chains from suppliers. For large organizations, not only can savings run into the millions, but the reliability of production operations can also greatly improve.

Despite its benefits, many companies have yet to tackle inbound transportation management. In many cases, hesitancy stems from the obstacles of an entrenched organizational structure.

"The biggest problem companies have with managing inbound freight is crossing functional barriers–for example, getting transportation managers to work with purchasing," says Robert Murray, president of Princeton, N.J.-based consulting firm REM Associates.

"For years, purchasing managers were removed from supply chain activities and were used to working on buying issues, vendor relationships, and costs in a different way. They were looking for the lowest unit cost and best service from vendors," Murray adds.

More recently, however, the "lowest landed cost" philosophy of managing the inbound supply chain is gradually supplanting this traditional structure. Businesses are factoring in all costs, especially inbound transportation and inventory carrying costs, rather than basing decisions on purchase price alone.

"Companies need to perform a grassroots analytical assessment to identify inbound supply chain costs," Murray advises. "They need to look at the cost of product, transportation, storage, inventory carrying costs, and service levels required to support production. Once they consider all these factors, they can create a unified structure that minimizes costs while maintaining required service levels."

Creating this unified structure and process framework can prove difficult because most companies have grown through acquisition. They may have different systems, as well as other locations using varied processes. To best maximize inbound supply chain management, companies often adopt common processes across different business components and use information systems to integrate all these processes and provide visibility and management capabilities across the enterprise.

UNBUNDLING COST

In segmented, stove-piped companies, collecting volume, vendor, and transportation data from across the entire organization presents a challenge. In many cases, for example, buyers know the dollar amount they spend but don't know how that translates into freight volume.


Do you need a logistics partner that will bend over backwards for you?
KENCO
LOGISTIC SERVICES
kencogroup.com
1-800-758-3289
Warehousing & Distribution • Transportation • Value-Added Services

"The single toughest issue is determining the cost of inbound transportation," observes Murray. "It's usually buried in the product price."

Businesses need to pinpoint what they are dealing with if they want to manage their inbound. He recommends asking: "Who is the carrier? How much actual weight do you move? Is it palletized, slip-sheeted, or floor-loaded? What are the pickup requirements?"

DATA DIFFICULTIES

Obtaining transportation cost information from vendors isn't necessarily easy. In some cases, businesses are better off collecting volume and requirement data from carriers rather than vendors. But once companies are able to aggregate this information and leverage greater control over inbound transportation and costs, they can begin moving toward new levels of supply chain sophistication.

"Inbound logistics enables a successful demand-driven, lean world," says Lorne Jones, distribution industry executive at Sterling Commerce. "Agile manufacturing operations require agile logistics operations. In a demand-driven world, control of inbound logistics is key. Without it, a consignee has little or no visibility into what's coming."

Connectivity is the enabler. In the past, companies had to manage an EDI system with many connection points to carriers. Today, carriers and consignees need only a single connection point.

"The inbound logistics team needs visibility to determine where they can get their hands on inventory," Jones explains. "If they can see their product, it becomes inventory they can deploy–even though it's not yet on the books."

As such, a total landed cost approach becomes possible only if the enterprise has complete visibility into all aspects of its inbound freight movements. H.J. Heinz learned this firsthand recently when it rolled out Sterling Commerce's transportation management system (TMS) to gain better control over inbound costs. For Toyota Industrial Equipment Manufacturing (TIEM), managing inbound flows–within its U.S. manufacturing facility and among suppliers–is just another day in the life of the Toyota Production System.

> "Agile manufacturing operations require agile logistics operations. In a demand-driven world, control of inbound logistics is key. Without it, a consignee has little or no visibility into what's coming."
>
> – Lorne Jones, distribution industry executive, Sterling Commerce

HEINZ CATCHES UP WITH INBOUND

When H.J. Heinz Company, the $2.5-billion global food company, launched a project to overhaul its inbound transportation in August 2006, its procurement organization managed the inbound freight flow, which consists of raw materials, ingredients, and packaging. "We had many prepaid arrangements with suppliers," recalls David White, inbound transportation manager with Heinz North America.

Heinz began its inbound freight management overhaul with a thorough evaluation of data. "We wanted to level set where we were vs. where we wanted to be," White says. "That was important because we didn't want to begin taking control of inbound randomly. We wanted to understand the upstream and downstream ripple effects our changes might have. So we needed to identify how much we were spending on inbound freight."

The data collection process took several months. Heinz had to identify where its inbound data resided–with suppliers, carriers, or other parties. It had to understand the network as it existed in its current state, identify its mode mix, and examine the breakdown between temperature control and dry freight. In some cases, Heinz had a great level of detail regarding its spend, but overall data ran the gamut from very transparent to very complex.

PATTERNS DEVELOP

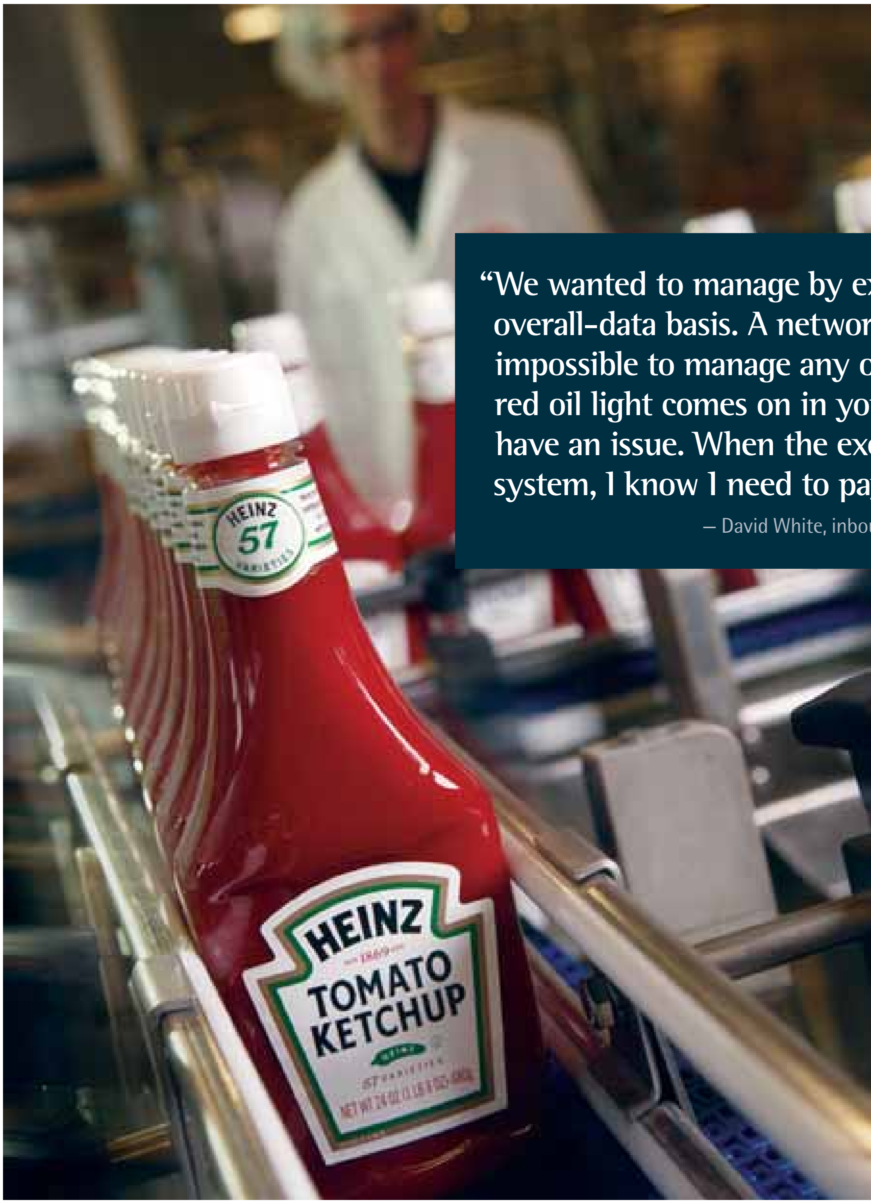
Obtaining the inbound freight cost data was only the beginning. As Heinz delved into deeper detail, it began to see patterns of continuous moves and round-trip freight, and where it could use dedicated carriers to manage business that had steady volume and low seasonality.

"We started to gain a clearer view into the way our network works, and saw the easiest and greatest opportunities for making the network more efficient with minimal service interruption," White says.

Throughout its inbound transportation reengineering, Heinz gave highest priority to service issues, such as transportation to the company's 26 frozen- and dry-production plants, as well as to its customers. "While everything is a cost exercise, no cost savings is great enough to risk sacrificing service," White notes.

Heinz looked at its suppliers from the standpoint of total direct-material spend. "We focused on our top 100 direct material suppliers," White explains. "Chances


Welcome to logistics your way.
LEAVING
HIGH COST TMS
VISIBILITY
0%
100%
FEES
E
½
F
$ SAVED
702639
TOTAL $ SAVED
PLAN
EXECUTE
REPORT
TRACK
VELOCITY
x 1000
SKU
UltraShipTMS™



H.J. Heinz Company's implementation of Sterling Commerce's transportation management system has enabled it to gain better control over inbound freight costs. In the process, the food manufacturer has greater visibility into transportation movements.

> "We wanted to manage by exception rather than on an overall-data basis. A network the size of Heinz is almost impossible to manage any other way. It's like when the red oil light comes on in your car and you know you have an issue. When the exception light comes on in my system, I know I need to pay attention to it."
>
> – David White, inbound transportation manager, Heinz North America

are good that these are the companies with which we do a high volume of transportation."

As Heinz began to assume control over its inbound transportation, it became apparent that the company needed an information system that could manage these movements and provide total visibility. "We didn't have great visibility into our carriers' service levels on inbound shipments," White recalls.

Capturing that information manually proved to be a labor-intensive process. The food company also needed a TMS that would provide complete visibility into inbound freight and enable it to take advantage of cost-savings opportunities.

After an extensive search process, Heinz selected Sterling Commerce's TMS solution. "We were looking for a TMS that had a background in managing inbound raw materials for manufacturing companies," White says.

MANAGING INBOUND END TO END

Heinz also required that the TMS provide freight payment, auditing, and claims management functions, as well as have the flexibility to work with a full range of suppliers.

"We wanted an end-to-end solution that managed our inbound transportation from the time our supplier tells us the material is available to the time the delivery is made," says White. "We also wanted to manage by exception rather than on an overall-data basis. A network the size of Heinz is almost impossible to manage any other way. It's like when the red oil light

Toyota Industrial Equipment Manufacturing routinely sends Toyota Production System experts to its supplier facilities to review ongoing processes and guide facilities in implementing lean manufacturing initiatives.

comes on in your car and you know you have an issue. When that exception light comes on in my system, I know I need to pay attention to it."

Heinz went live with the TMS solution in July 2007. Implementing it was a "game change" for the company, White believes. "For the first time, we are utilizing our carriers more efficiently and getting full visibility into our costs and physical movements," he says. "We gain control, and that lets us provide better service to our plants."

TPS TODAY: REFURBISHING AN OLD MODEL

Some things never change. At Toyota Industrial Equipment Manufacturing's (TIEM) Columbus, Ind., facility, the Toyota Production System (TPS) lives on. As the U.S. materials-handling arm of Toyota Industries Corporation, TIEM produces more than 100 units of assorted Class I, IV, and V lift trucks on an average day.

True to its legacy, "TIEM doesn't build generic models," says Bruce Nolting, vice president of logistics, production control, purchasing, sales and service parts for Toyota Industrial Equipment Manufacturing. "About 40 percent of our products are specially designed and require unique components to build–anywhere from five to 25 customized parts."

While he acknowledges TIEM is not as evolved as its automotive parent, it is moving in that direction as it continues to fine-tune the Toyota Production System.

For each of its three production lines, it runs multiple models of trucks. TIEM custom-manufactures forklift trucks in line, so it depends on a sophisticated pull system to transport components and parts inbound from suppliers as needed.

"We design, order, and kit components, then send them to the assembly line one by one," explains Nolting. So making sure suppliers are in sync with production is important.

The kanban system makes it all possible. TIEM teaches all its different suppliers–from casting to machining and all parts in between–to produce quantities in smaller lot sizes while training them in the nuances of the system. In turn, suppliers use this daily order system to drive their own production schedules and to manage on-hand inventory of finished goods.

"Among our 65 local suppliers, we make very few changes," observes Nolting. "We have developed long-term relationships with them largely through sharing this production model. As is often the case, they see the advantages of implementing the TPS and ask us to teach them how to take their operations to the next level."

TIEM has even gone so far as to regularly bring in TPS gurus from both the material handling and automotive

manufacturing sides to visit with suppliers and review their progress.

While TIEM's supply base remains fairly static, its inbound transportation needs are routinely in flux, depending on sales demand and corollary inventory needs.

The lift truck manufacturer's supply base varies from local (within a 250-mile radius) to global–Japan, where its parent company operates. The majority of its local vendors use kanban to communicate and receive demand requirements and TIEM schedules multiple deliveries per day into its milk run system.

"We arrange the trucking, work with our milk run logistics provider, and build loads as efficiently as possible. We operate seven milk runs a day, signal to our suppliers daily, and give them our production forecast and deliveries three to five days out," says Nolting.

By forecasting expected demand up to five days out, TIEM presents suppliers with time windows picking up and delivering parts. When it delivers a kanban (order) it requests immediate notification from that supplier on whether it can produce that amount.

Depending on demand and needs, TIEM can then work with the supplier to aggregate components within the four- to five-day forecast. For example, if a supplier can only produce 250 parts one day, when 300 are needed, they can make up the balance the next day.

SEQUENCE OF EVENTS

Mid-month, TIEM sets its production sequence for the next month, while also sending an advanced notice of parts needs to suppliers. This serves to give its partners a preliminary idea of forecasted demand as well as allowing TIEM to level its production schedule and maintain a continuous flow of different parts.

"We look at our product mix and orders that we have received. Then, before we set our sequencing, we level these models over time," offers Nolting. "We level several different components, depending on factors such as our own internal production capacity."

In this way, TIEM automatically flattens its production output and spreads out part needs and deliveries over days rather than batching orders.

"Leveling can help accommodate our Takt-time (time required to produce a component on one vehicle) so we can maintain that flow over a set period," Nolting says.

"In some cases specialized trucks take longer to manufacture–so we may produce one out of every five trucks and spread production out over the day," he adds. "This levels our pull, which levels our kanban to our suppliers, and levels our suppliers' production schedule."

TIEM uses similar standards for managing suppliers outside its 250-mile milk run radius who ship daily deliveries of truckload quantities.

"We source counterbalances from a company in Texas, and signal to them what daily deliveries should be. When we receive a daily load in the afternoon, another delivery for the next day is already on the road," says Nolting.

For other parts coming in from overseas, the transportation leg becomes vitally important. TIEM generally sources critical parts such as engines from its parent company in Japan.

Toyota Japan controls its own local

Toyota Industrial Equipment Manufacturing wants to task suppliers with kitting parts farther back in the supply chain so that it can pull components in a specific production sequence. Incoming parts can then go straight to the assembly line.

True to its TPS legacy, Toyota Industrial Equipment Manufacturing relies on its kanban system to produce in excess of 100 units of assorted Class I, IV, and V lift trucks on an average day.

supply base, which supports TIEM's U.S. facility as well as a sister production factory in France. The Japanese headquarters collects TIEM's inventory orders and dispatches requirements to its local suppliers.

"We send our parent company in Japan a monthly order," says Nolting. "Our March order for Japanese parts goes out the first week of January–so there is a 45- to 60-day lead time for parts coming from overseas."

TIEM receives a container schedule the last week of every month with the number of containers in route. It can then set an unpack schedule. Toyota Japan coordinates and negotiates transportation with its ocean carrier partners.

"These containers come in from the West Coast through Chicago–we bring them to our facility from Chicago using a third-party logistics provider, on a container-by-container schedule," adds Nolting.

Because of the distance, Japan's different production timeframes (due to holidays, for example), and possible demand fluctuations, TIEM manages the safety stock level for those types of parts.

"From month to month we adjust our Japan parts safety stock levels–we increase or decrease the inventory depending on the circumstances. Ultimately, our goal is to minimize our backlog, reduce lead time to customers, and manage parts inventory accordingly," says Nolting.

TAKING TPS UP A NOTCH

One of the great benefits of using TPS today, and applying it with technology, is that it gives manufacturers such as TIEM greater flexibility in managing demand fluctuations, without holding excess inventory and impacting work flow.

"For example, if a paint booth goes down at our facility so we can't paint truck frames, and we know it will be down for more than two hours, we have the visibility and capacity to contact our suppliers and tell them to hold shipments," observes Nolting.

Because some of its major steel suppliers are less than two hours away, TIEM can eliminate that inventory from being stored in its facility. With control over inbound transportation, and by planning demand needs out four to five days in advance, it can work with suppliers to make up for the discrepancy within that window.

EFFICIENCY ON THE FINAL LINE

Moving forward, the manufacturer is also looking to task suppliers with kitting parts farther back in the supply chain to create efficiencies on the final assembly line.

"A vendor might supply 15 different part numbers–the same type of part but for different model trucks," Nolting explains. "To support our level production plan, we signal to suppliers the delivery sequence for various components required to match our model mix. So for truck #879, we signal two part numbers; and for truck #880, we signal two additional part numbers–we give them instructions by part number and in what sequence trucks are being produced," says Nolting.

Essentially, TIEM is signaling parts deliveries truck to truck to support the assembly processes. This way kitted parts are coming to the dock in sequential order and can then go straight to the line, rather than parts coming in for all trucks that will be produced that day.

Many of its critical parts are currently moving in this type of sequential rhythm, and TIEM hopes to bring this next level of sophistication to all of its moving parts.

THE EVOLUTION OF INBOUND LOGISTICS

INBOUND LOGISTICS: A NEW ORDER

The story of inbound logistics continues to evolve. As consumer economics fluctuate, new economies open up, and global offshoring continues its rapid pace, the challenges of forecasting demand and matching supply to the market, remain considerable. If supply chains are truly demand-driven, they are flexible and adaptive to shifting global trends. In this sense, inbound logistics is not static. Rather, it is a journey for continuous improvement.

From a micro-level perspective, global businesses today across all verticals face their own distinctive supply chain challenges–from supplier integration abroad to DC consolidation at home. While each has its own justification, incentive, and context for managing inbound transportation and processes, one common thread joins them: creating a cross-enterprise structure that embraces pull logistics requires vision, leadership, and consequently, the recognition that such an approach is very much a process rather than a product. For companies such as American Greetings and Panasonic, this understanding is apparent in their own stories from yesterday, and their plans for tomorrow.

GREETING CHANGE: HELLO INBOUND

American Greetings has been actively controlling routings for collect inbound shipments for more than 15 years. The Cleveland, Ohio-based greeting card company, which owns brands such as Carlton Cards, American Greetings, and Gibson, services approximately 70,000 retail stores in the United States and 125,000 worldwide.

In the past decade the company has routinely evaluated and adapted its transportation system for both foreign and domestic inbound business and worked with carriers and logistics service providers to meet changing needs.

"We used to hard-code the routings in the purchase order template so we could communicate our preferred carriers to our vendors through the purchase orders. That process worked, but it was cumbersome and slow to respond to marketplace changes," says Mark Copfer, corporate director of traffic for American Greetings.

The company brings in 2,000 to 2,500 containers annually, carrying a wide variety of printed and non-printed products. Domestically it sources some of those same finished goods, along with raw materials such as paper and ink shipped to its manufacturing facilities.

American Greetings' inbound program has evolved with the sophistication of IT

capabilities and the emergence of capable logistics service providers.

"We have partnered with Simplified Logistics (a logistics solutions provider based in Bay Village, Ohio), who supplies the 'engine' for the program. We ask our vendors to visit our dedicated Web site, input the salient characteristics of their shipment–origin ZIP code and our destination plant–and the program determines if it should be a package, LTL, or TL shipment," Copfer explains.

For package business it uses UPS collect. American Greetings also uses several LTL carriers in its program but designates just one for every ZIP code pair.

"If the volume warrants a TL carrier, we direct our vendor to contact us for our preferred carrier list. Given the dynamic TL market, we find value in shopping the load to our core TL carriers so we don't lock in one TL carrier for most lanes," adds Copfer.

American Greetings' new Web solution allows it to update routings quickly, ensuring it always has the optimal carrier options in its routing instructions. This process includes compliance reporting and chargebacks to help it modify vendor behavior if needed.

"Our reasons for controlling the inbound business are similar to most other companies–to reduce cost, leverage volumes, reduce the number of carriers, and drive better service," he adds.

American Greetings' Web-based solution allows vendors to input shipment characteristics and receive transportation instructions.

But American Greetings also has time on its side. During the past two decades it has developed better working relationships with its partners and created a supply chain-wide blueprint for embracing inbound directives.

Since American Greetings established its inbound program, it has worked through any growing pains with its partners. Today, any new vendor relationships are built with this program in mind. Copfer remains committed to further streamlining inbound transportation.

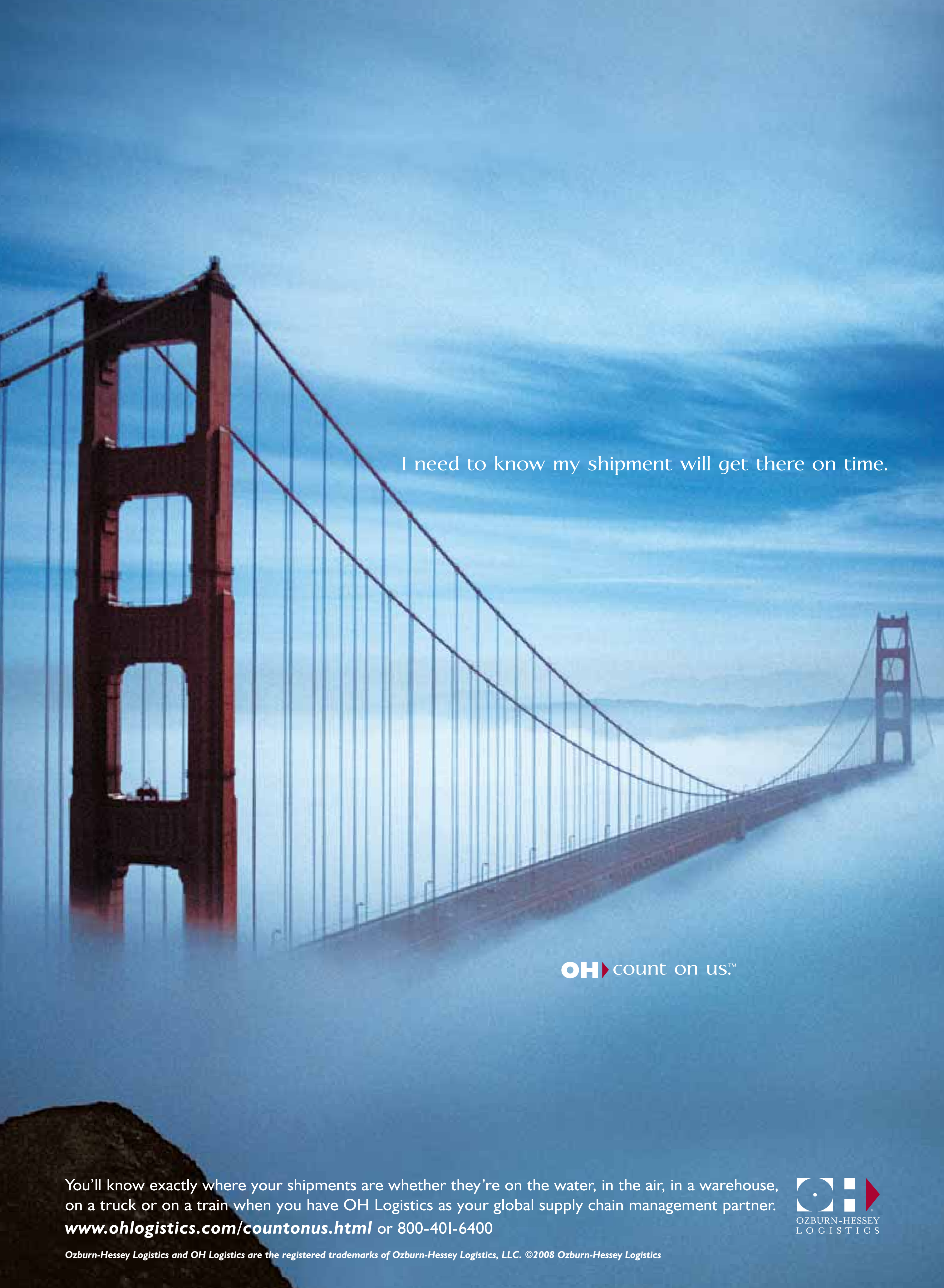
"We still have opportunities to drive more cost out of our inbound freight," he notes. "We are looking at ways to limit the number and increase the size of inbound shipments. Typically, we don't want our vendors to ship partial orders."

He points to a few value plays that will help ensure vendors ship entire orders complete, and on time. For example, American Greetings has discussed the practicality of consolidating inbound shipments from multiple, geographically similar vendors. The idea is to create larger LTL shipments, and possibly even TL moves, through the use of timely, accurate information.

"We'd also like a global view of all international and domestic shipments to reside on one system, allowing us to more efficiently plan labor and space resources at our plants while improving communication throughout the corporation about inventory availability," he adds.

While the company's inbound program remains elastic, its commitment to managing inbound logistics remains fixed–and conveying this level of conviction has been crucial to winning over supplier support from the beginning.

"Being able to demonstrate to carriers that you control the inbound business,


I need to know my shipment will get there on time.
OH count on us.™
You'll know exactly where your shipments are whether they're on the water, in the air, in a warehouse, on a truck or on a train when you have OH Logistics as your global supply chain management partner.
www.ohlogistics.com/countonus.html or 800-401-6400
OZBURN-HESSEY LOGISTICS
Ozburn-Hessey Logistics and OH Logistics are the registered trademarks of Ozburn-Hessey Logistics, LLC. ©2008 Ozburn-Hessey Logistics

Panasonic's redesigned demand-driven supply chain helps it score major customers with improved on-time delivery times and in-stock percentage rates.

and that they can expect to receive the volumes you commit to them, has had a positive impact on rate negotiations," Copfer concludes.

PANASONIC'S POINT-OF-SALE PIVOT

Sometimes the impetus for a demand-driven transformation comes from the customer. When Panasonic, a leading supplier of plasma televisions, digital cameras, telephones, and other household consumer products, began considering a major supply chain redesign in 2000, it did so at the behest of its retail customers, noted Mike Aguilar, then president of Panasonic National Sales Company.

"Our largest customers came to us and said, 'You have to start a system of supply chain management. You need to reduce our inventory, and you should be reducing yours as well. Most important, you have to reduce the lead time for both of us. The company that keeps us in stock at the highest levels will be the winner in the long run,'" he recalls. "We took that as a meaningful challenge and found it to be a driver to gain market share that our competitors wouldn't pick up."

Meeting those increased customer demands presented a sea-change in vision and execution as Panasonic's forecasting and allocation systems at the time were highly labor-intensive and based on Excel spreadsheets.

Panasonic, which serves a who's who of major retailers with a penchant for controlling inbound–including Best Buy, Target, Wal-Mart, and Sears–ultimately turned to i2, Dallas, Texas, to transform its end-to-end supply chain management system.

The company opted to roll out i2's *Demand Planner* and *Supply Chain Planner* solutions to support its largest customers first, then approach its medium-sized customers. Results were impressive.

"Prior to the i2 implementation, we only had historical data on what we shipped out vs. the backorders," recalls Aguilar. "We had no data on true demand, or out-of-stock ratios on the retail shelves. With the i2 system, we can build a great historical record based on true demand, which we've never had before."

On-time delivery for major customers increased to 84 percent, and in-stock percentage neared 90 percent–which, given the consumer electronics industry's historically long lead times and quick product cycles, were remarkable numbers.

Panasonic didn't stop there. In 2004, after a failed ERP rollout and downtick in financials, it decided to again revamp its supply chain with a demand-oriented solution that could more closely integrate marketing and supply chain initiatives and improve visibility from

INBOUND INSIGHT

"With no time to spare, the U.S. leg of the inbound supply chain must perform with absolute reliability. That 'last-mile' delivery becomes the difference between the product being on the shelf for the sale or missing the market."

— Dave Miller, COO, Con-way Freight

SAVE 85% ON FREIGHT PAYMENT OUTSOURCING

Check Out the PowerTrack Difference

Description	Typical Outsource Provider	PowerTrack
Invoice Processing		
Per Invoice Charges (30% Electronic, 70% Paper)	$0.78	-----
Per Invoice Charges (95% Electronic, 5% Paper)	-----	$0.37
Invoice Audit Manual	$0.20	$0.00
Invoice Audit Automated	$0.20	$0.00
Invoice Audit Exceptions	$0.80	$0.00
Paper Multi-Level Invoice Allocation	$0.11	$0.00
Invoice Communication / Postage	$0.39	$0.00
Bill of Lading Match Files	$0.05	$0.00
General Ledger Match Assignments	$0.02	$0.00
Per Invoice Cost:	**$2.55**	**$0.37**
Monthly Reporting		
691 Payment Cycle Report	$150.00	$0.00
692 Client Remit EDI	$150.00	$0.00
Reporting License	$750.00	$0.00
Additional Monthly Charges:	**$1050.00**	**$0.00**

85% Cost Savings

No Monthly Fees

PowerTrack®

Call now and save 85%.
800-925-4324

800-925-4324
info@powertrack.com
www.powertrackglobal.com

Results are an example. Savings may vary based on actual circumstances.

the factory to the retail shelf.

This time around, Panasonic worked with i2 to configure and implement its vendor-managed inventory (VMI) solution. The collaborative effort shifted the focus of planning away from the manufacturer and closer to the consumer, comprising key elements of inventory management such as analysis, forecasting, planning to allocation, replenishment, and order execution.

Marked improvements resulted. Inventory distribution aligned with consumption, and customer availability jumped to 95 percent. The average supply in the channel went from 25 weeks in 2004 to just five weeks in 2005.

In a 2006 interview with i2's *Supply Chain Leaders* magazine, Aguilar reflected on how Panasonic was leveraging point-of-sale signals to better forecast demand for its growing plasma-screen TV business.

"We had to transition from being a 'sell-in' company to being a 'sell-through' company. The real sale doesn't take place when we sell 'in' to our retailers; it occurs when the retailer sells 'through' to its customers. We needed to become more cognizant of what the retailers own and to look at end-to-end supply," he said.

Where does Panasonic go from here? In January 2007, Matsushita Electric Industrial Co. (Panasonic's parent company) and diversified chemical group Toray Industries announced plans to build a new plasma display panel (PDP) manufacturing facility in Japan to further ramp up PDP production capacity–and make it the world's largest PDP manufacturer.

Panasonic forecasts that 65 percent of the 200 million world aggregate demand for TVs will be for flat-panel models by 2010. With the first phase of production at the new plant expected to commence in May 2009, the new facility will implement a comprehensive production management scheme to cover all its factories and realize speedier and more flexible supply of products. Panasonic's demand-driven journey continues.

INBOUND INSIGHT

"The complexity of the supply chain requires more focus on inbound. With businesses sourcing materials from overseas, coordination of global supply chains puts much greater focus and importance on inbound transportation – especially in driving costs down."

— Frank Perri, executive vice president, Pilot Freight Services

INBOUND FROM FUTURE'S PAST

One century ago, demand-driven logistics as practiced by Henry Ford and later Taiichi Ohno, was considered the future of manufacturing. Today, inbound logistics remains the next frontier of supply chain enlightenment. But what lies beyond?

In theory, demand-driven practice will always be tied to the future because predicting consumer variability or "knowing the unknowable" is a challenge that transcends time. Ford Motor Company and Toyota recognized this as they tested and tailored their JIT processes to ensure steady workflows. Companies such as H.J. Heinz, American Greetings, and Panasonic are equally cognizant and attuned to this current and imminent reality as they transform their supply chains.

In practice, their stories–past and present–hint at what is to come; the selective ways businesses across myriad industries can envision and execute demand-driven initiatives. But in a broader context, beyond our inbound utopia, it is still largely an unpracticed science.

For novices, the demand-driven drift augurs infinite potential to effect a revolutionary shift in how they integrate supply chain functions and coordinate product flow throughout the extended enterprise. But embracing inbound as a change agent is not without inherent barriers. Technology properly applied is an enabler, but merely a stopgap as a fix for strategic holes. Process improvement requires a hard-core philosophical shift. Walls must come down and wills must be broken. This requires time, commitment, and importantly, leadership.

Today's few, true demand-driven visionaries are engineering and adapting inbound transportation and logistics strategies to open new avenues for streamlining their supply chains, scaling inventory, enhancing visibility, unbundling total landed costs, and driving collaboration among supply chain partners. The potential is limitless.

As Toyota learned from Henry Ford, and as today's leaders learn from the Toyota Production System and each other, links in the inbound evolutionary chain continue to twist and turn, break away, and come back together as demand meets supply.

Imagine a time and place where demand-driven DNA is hard-coded into the corporate helix; where those that adapt not only stand a better chance of surviving, but of thriving and propagating at will. This is the future of inbound logistics. ■

DiR jo

IT'S A JOB... AND SOMEBODY HAS TO DO IT. MEET THE GUYS WHO HAVE STEPPED UP TO THE TASK.

TY

OBS

BY JOHN EDWARDS

When it comes to logistics jobs, some people plan transportation strategies, organize schedules, develop and maintain IT systems, and create budgets from 9 to 5. Others move the freight, load and unload trucks, and stock warehouses - the "dirty jobs"—that make it all come together. Here's a look at the less- than-glamorous work that unsung logistics heroes perform every day.

ROAD WARRIOR

Nobody ever said driving a tractor-trailer was easy. **JOHN MERRITTS, a driver for Penske Logistics** in Reading, Pa., knew that when he signed on for the job. But he can't imagine doing anything else for a living. "The road gets into your blood," he says.

Merritts isn't just your average truck driver. When the Truck Renting and Leasing Association picked its "2007 Driver of the Year," Merritts' name was engraved on the plaque.

With more than 30 years on the road, plus one decade spent driving trucks in the U.S. Air Force, Merritts has experienced nearly every type of load and road a driver can encounter. "In the Air Force, I delivered munitions to the officers loading the B52s," he recalls.

Merritts began his commercial driving career in 1977, working for Leaseway Transportation. In 1995, when Penske purchased Leaseway, Merritts switched uniforms and kept on driving.

On a typical day, Merritts wakes up between 2 and 3 a.m., and is sitting in his cab one hour later. Raised on a farm, he appreciates the quiet and solitude of early morning hours. "I'm delivering shipments in another state before most people wake up," he says.

Merritts currently works 45 to 55 hours each week, covering approximately 350 to 500 miles per day. He mostly delivers to the states closest to his Columbus, Ohio, hub: Pennsylvania, West Virginia, Kentucky, Indiana, and Michigan. Merritts usually drives to one or two stops every day, sometimes getting a pickup on the way back. Otherwise, it's a straight haul back to Columbus. "I'm lucky, I get home every night," he says.

Besides driving his own loads, Merritts also lends his knowledge and expertise to colleagues. In 1995, Penske tapped Merritts to teach a periodic day-long defensive-driving course. Over the years, Merritts has trained more than 1,000 drivers, although he claims he learns at least as much as he teaches. "Ten or 15 drivers might attend a class, but it feels like there's 1,000 years of experience in the room," he says.

The biggest changes Merritts has witnessed during his three decades on the road are increasing traffic congestion and declining condition of the nation's roads. "Drivers have to adapt to different conditions," he says. "Every day is a learning experience."

Merritts attributes his successful and lengthy career to his ability to acquire and retain positive traits. "Habits are everything," he says. "It takes 13 days to change a habit, good or bad."

His advice to new drivers? "Absorb what you learn at driving school and make them habits" he recommends. "These habits will take care of you for years to come."

ON THE WATERFRONT

PETER PEYTON is secretary of the Marine Clerks Association, Local 63 of the International Longshore and Warehouse Union in San Pedro, Calif. After toiling on the Los Angeles waterfront for more than 25 years, both as a longshoreman and as a marine clerk, Peyton knows what it means to get your hands dirty loading and unloading ships.

Waterfront workers begin their workday like few other people. "When you get to the hiring hall in the morning, you pick your job, based on the number of hours you have," Peyton says. Under the "low man out" system, the person who has worked the fewest number of hours is entitled to pick first.

This arrangement gives waterfront workers plenty of job flexibility, and lets them choose the activities they most enjoy, Peyton says. He notes that jobs range from driving vehicles of various shapes and sizes to operating massive hammerhead cranes to working clerical jobs.

Despite the available options, most of the work is relentlessly hard and demanding. The average longshoreman works about 2,000 hours a year, Peyton says.

While many laborers gradually settle into a steady routine of working at a single task, others prefer to cross-train in various fields to develop a diverse skill set.

"You can train on different equipment as time goes on," Peyton says, adding that training can be either formal or informal, depending on the job. "Some jobs you learn by experience; others, you need training–then you have to pass a qualification test."

Peyton is trained and qualified in several areas, including hammerhead crane operation, forklift driving, and as a supercargo – the person in charge of loading and discharging a vessel's cargo.

Peyton, 51, didn't plan to become a longshoreman. He turned to the field after his first career choice didn't unfold as he had hoped. After graduating from UCLA, Peyton worked in the film business for several years, but eventually decided he wanted a career with more stability, a steady income, and benefits. That's when he decided to extend his family's tradition by becoming a fifth-generation longshoreman.

After making the career switch, Peyton never looked back. He says he likes the way longshoremen pull together to accomplish their work. "When you work together you learn to accomplish things together," he notes.

While longshoreman are working as hard as they ever have, the marine cargo industry, particularly in Los Angeles, is facing some serious challenges, including environmental issues, congestion, and cargo growth. "The volume of cargo we handle has grown in double-digit figures over the last 14 years," Peyton says. "Today, the world moves through a container."

The job's biggest drawback, Peyton says, is its danger. The field has actually grown more perilous due to the introduction of increasingly powerful equipment. "Years ago, workers got hurt in dock accidents," he says. "Today, they get killed."

Still, Peyton says he wouldn't want a job in any other industry. "The union has negotiated great contracts and we've been afforded many job choices," he says. "It is a great job."

FINAL STOP

At the end of the logistics road stands **BILLY SPRADLIN, a production technician for Road Systems Inc. (RSI)**, Searcy, Ark. RSI specializes in refurbishing elderly trailers so they can return to the nation's highways, rolling as steadily and safely as their youthful counterparts.

Spradlin's job, however, has nothing to do with breathing new life into old trailers. In fact, he's an industrial angel of death, euthanizing trailers that have reached the end of their road-worthy lives and can't be rejuvenated.

Spradlin begins his work each day at 6 a.m., wielding a "sparker." He uses the cutting torch to slice through a trailer's thin aluminum shell "from top to bottom," Spradlin says, "to make the trailer totally disappear."

Spradlin has been on the job for two years, and feels that he is doing important work. "Instead of the trailers sitting somewhere and rotting away, we tear them down, salvaging any materials that we can," he says. "The best parts are cleaned up, refurbished, and recycled into rebuilt trailers." As it turns out, Spradlin's dirty job actually has a green lining.

Spradlin normally works a 40-hour week–four 10-hour days. Sometimes, during busy periods, he may earn up to 10 hours of overtime.

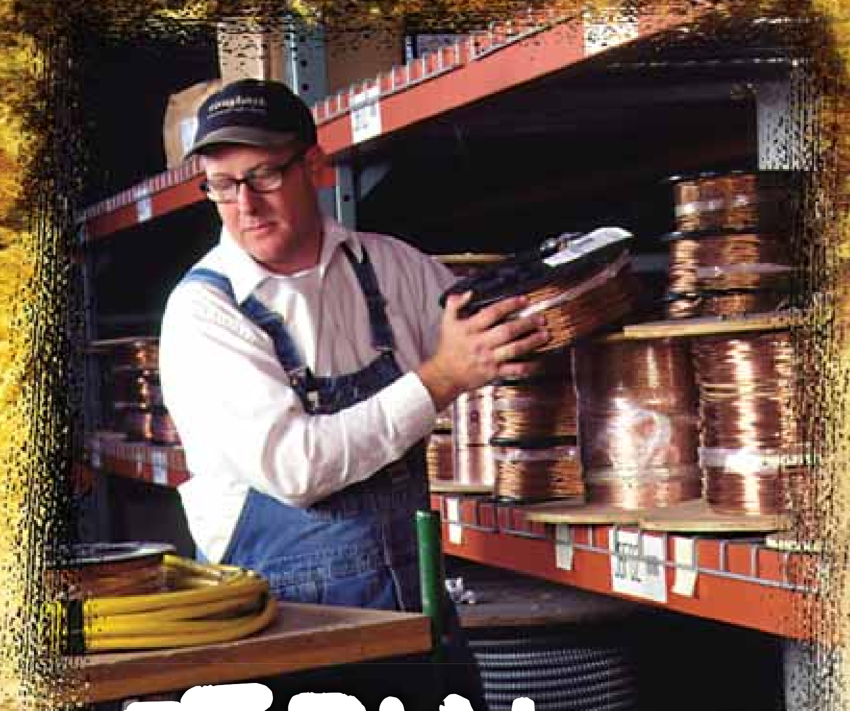
The work can be both tough and dangerous unless proper precautions are taken. "For example, when the sparker hits aluminum, it heats to 2,000 degrees instantly," he says. "If you're not wearing the right protection, you'll know it." Upon joining RSI, Spradlin received four hours of training on step-by-step disassembly procedures and the proper use of safety equipment.

Spradlin is proud of his work and thoroughly enjoys it. "I'm a 33-year-old big boy who's getting paid well, with good benefits, to tear up stuff," he says. "What else could I hope for?"

On the other hand, Spradlin wishes he could eliminate some of the more noxious aspects of melting through and tearing away aluminum, insulation, wood, and other trailer materials. "It's just plum nasty," he says. Spradlin notes that his occupation also creates a dirty job for his spouse: "My wife has to clean the shower daily," he says.

Spradlin accepts the fact that getting dirty is an unavoidable part of his job. "If you stay clean doing this, you're doing something wrong," he says.


Remember what it was like to exceed expectations?
Use the proven, world-class supply chain leader and exceed your customer's delivery and service expectations.
Logistics & Electronics
1.800.466.4202
www.atcle.com
FULFILLMENT
RETURNS
TEST & REPAIR



MATERIAL WORLD

REG ERSPAMER is a material handler for Graybar, a Fortune 500 company located in St. Louis, Mo., that specializes in supply chain management services. Erspamer, who has worked for Graybar for 15 years, juggles a variety of tasks. "I take care of anything having to do with handling material," he says. "From receiving it in the warehouse to delivering it to our customers – driving a forklift or a delivery truck – I have a hand in it."

Erspamer joined Graybar on a friend's recommendation after realizing that his previous job, which involved constant travel, was ruining his life. "One night, when I was traveling in Iowa, I called home and my three-year-old son asked when I was coming home for a visit," he recalls. "I knew then that I needed to make some changes so I could be closer to my family."

Erspamer, 49, works an average of 40 hours per week. "I have the option to work overtime, but I don't take it as much as when I was younger," he says. In fact, Erspamer says he's beginning to feel the impact of both time and age. He notes that boxes seem to weigh a lot more than they did 10 years ago.

He has also challenged himself to adapt to new technologies and work procedures. "I've had to make adjustments in my work, as our daily tasks are structured around Graybar's electronic systems," he says. "It takes some time to get used to, but I can understand and appreciate how the technology makes the work more efficient and faster for me, and for the company as a whole."

Erspamer never gets bored with his job. "Because of the variety, it doesn't get old," he says. He didn't feel that way at first, though. "The first year on the job, I packed boxes every day," he recalls. "That took some getting used to because I was involved in a lot of verbal communication in my previous job. Boxes don't have much to say."

While Erspamer wouldn't object if his children decided to follow in his footsteps, he doubts they will. "I don't think they would want to because it isn't the most glamorous job," he says.

Still, Erspamer has no regrets. "This is a career you can stick with for years," he says.

Inbound Logistics tips its hat to "Dirty Jobs," the Discovery Channel show that was the inspiration for this article.

THE ALLEN GROUP

Logistics Parks

The Allen Group's master-planned logistics parks, located in key distribution markets throughout the United States, offer your company build-ready sites and industrial space for lease to help streamline your supply chain process.

Our high-tech facilities are located around some of the most sophisticated rail, intermodal, highway and air access in the country. With 8,000 acres dedicated to distribution, warehouse or manufacturing needs, we've got a prime location for you.

THE ALLEN GROUP

A COMMERCIAL DEVELOPMENT COMPANY

Visit www.allengroup.com

DALLAS LOGISTICS HUB
The Center for Worldwide Trade

LOGISTICS PARK KC

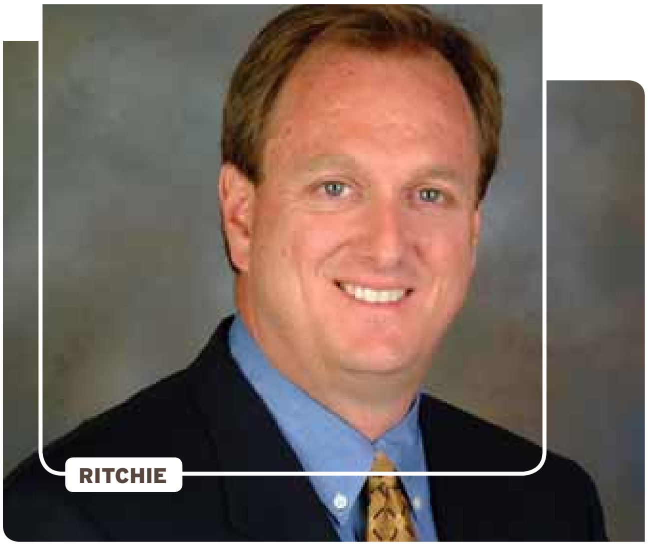
MIDSTATE 99
DISTRIBUTION CENTER

ASK THE EXPERTS

Leading C-level execs* with 260 years of combined logistics and transportation experience address tough industry questions. Their advice, words of caution, and strategic vision can help you face the challenges of 2008 and beyond.

* For the run-down on our panel of expert advisors, see "Voices of Experience" on page 159.

Q What innovations and workarounds are you and your customers developing to minimize the **challenges caused by deteriorating transportation infrastructure?**



DAVID MILLER, Chief Operating Officer, Con-way Freight: Con-way has invested heavily in IT systems that allow our engineering group to continually conduct lane and volume analyses, which optimize the line-haul network while protecting service levels. This continual re-engineering takes into account daily infrastructure challenges to effectively plan routes based on need and traffic patterns. We've also mitigated some effects of severe congestion in major metropolitan areas by expanding facilities and strategically investing in multiple service centers.

JACK HOLMES, President, UPS Freight: UPS is working with customers to schedule pickups and deliveries during non-peak hours. After-hour pickups and deliveries have been especially effective in Los Angeles, where drivers spend more time sitting in traffic than in any other U.S. metropolitan area.

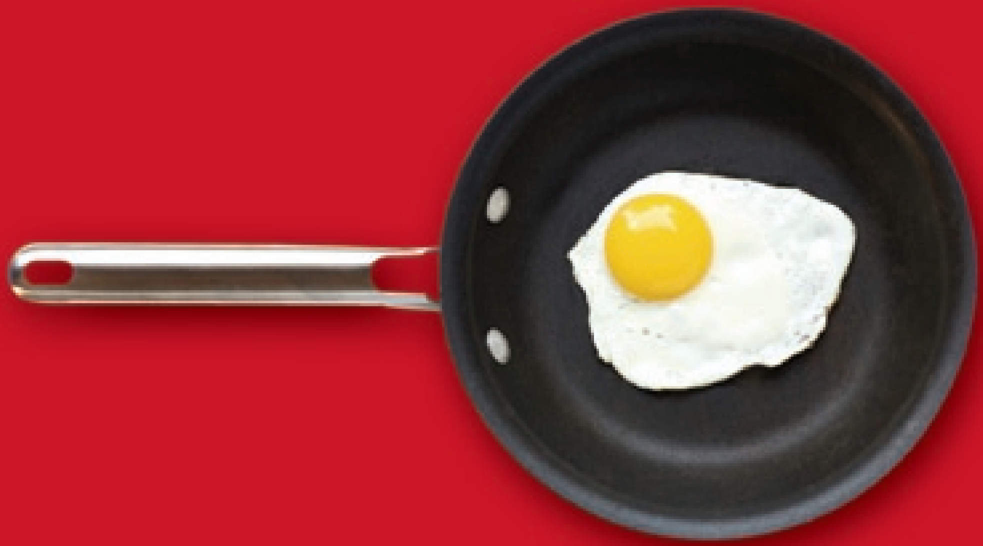
Placing more trailers on flatcars in traffic lanes where it makes sense for us and for our customers has also helped reduce interstate traffic.

JIM RITCHIE, President and Chief Executive Officer, YRC Logistics: We developed workarounds or contingency planning in two primary areas. The first is expanding and improving China infrastructure and networks. With the tremendous growth in sourcing from China, we've been able to develop best practices for intra-China transportation that incorporate equipment procurement, safety, and fleet management processes.

The second is West Coast congestion, which we tackled through contingency planning with alternate ports on the East Coast and in Mexico. Through a relationship with KC Smart Port, we're able to bring goods into Kansas City via rail, then clear them upon arrival. Kansas' central location makes it a prime distribution site.

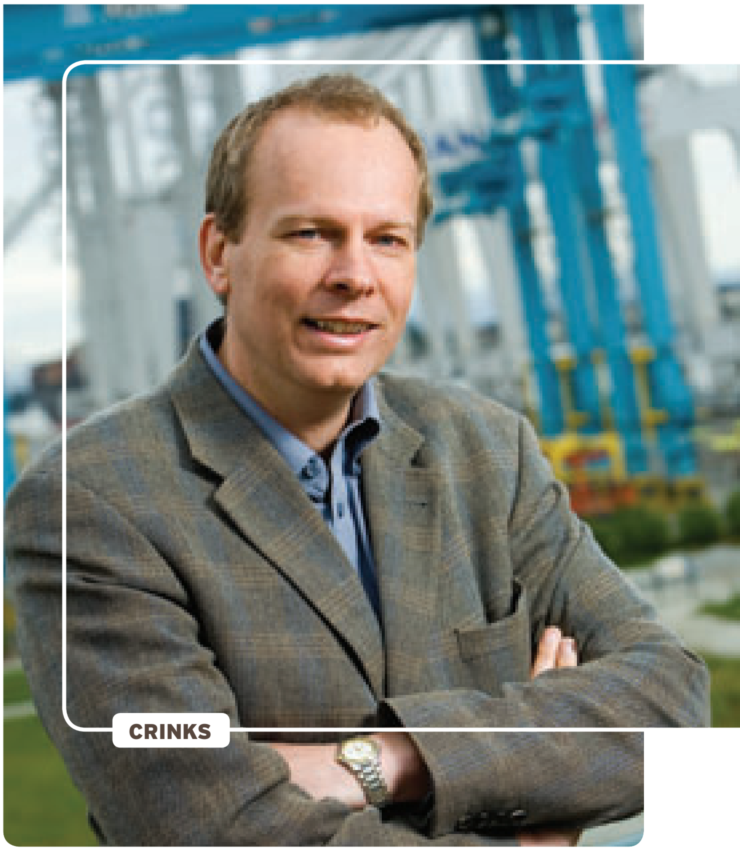
PETE WESTERMANN, Chief Operating Officer, Total Logistic Control (TLC): TLC utilizes optimization technologies that take into account daily traffic patterns, known obstructions, seasonal construction, and other bottlenecks to keep trucks moving. We also work with partners whose specializations complement our own.

TOM ESCOTT, President, Schneider Logistics: Port congestion continues to challenge our industry. Schneider is working with customers to diversify our port strategy so imports and exports can flow in a more balanced way. To mitigate increasing port capacity constraints, we've implemented brokerage-type solutions to aggregate capacity. We've also helped shippers aggregate capacity from smaller carriers and invested in visibility tools to manage delays more quickly.

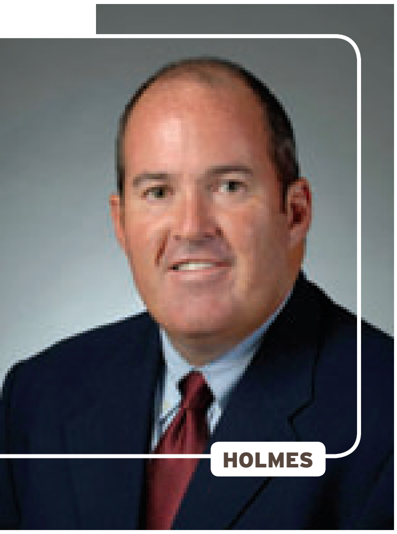



MAYFLOWER

Q Transportation leadership at the local, state, and federal levels has come under fire. How does this affect your business? What efforts can the private sector make to address the issue?



WESTERMANN, TLC: The federal transportation system, and the many levels of oversight it engenders, has always posed a challenge for companies involved in interstate commerce. Conflicting regulations, hundreds of taxing bodies, and thousands of rules and regulations add real cost to the supply chain. Most government leaders don't understand or appreciate how complex and integrated the supply chain is–or how impacting one portion of it with a new tax or regulation will cause a corresponding negative impact. It's essential to educate our leaders on the critical role our industry plays in global, national, and state economies if we're to stem the ever-escalating tide of regulation and taxation.



HOLMES, UPS Freight: Elevating the issue of the nation's infrastructure for collective ownership and policy discussion comes first. It isn't a point of fault, but rather a time for action. This can start with public forums and business and academic leaders working together with elected officials to propose solutions.

We must create a national transportation solution that looks interdependently at all transit modes and abandon the piecemeal approach that finds local municipalities determining what ports, bridges, and roads will be fixed and how they'll be financed. A national transportation plan should look to the future for its blueprint, assessing what goods we'll manufacture, and what products and commodity inputs we'll import. Collective public/private discussion means more partnership in construction prioritization and technology deployment, as well as user-based fees and taxes to fund investment. It's imperative, however, that any proceeds collected fund new capacity.

PAUL CRINKS, Chief Executive Officer, International Asset Systems (IAS): The lack of transportation policy across many layers of government is a serious issue for all of us. The private sector has already taken steps in an effort to create a more settled environment. Companies are acting locally to effect change. Logistics businesses have worked with local entities to set up truck-only highway lanes, intermodal facilities, and logistics parks.

'Coalitions of the willing'–both from industry and the community–have put aside individual interests to achieve significant improvements. One example: the PierPASS program in Southern California, a private sector initiative that has helped industry and local interests. Business associations have lobbied and brought together government and the private sector to solve problems. Associations such as the Intermodal Association of North America seek companies to take leadership roles. Companies that answer the call, and participate with industry associations, can influence the organization's agenda and lobbying efforts.

Q Global offshoring is opening new trade channels and locations. **Where are these emerging trade lanes and transportation/logistics hotspots?** Where are your customers sourcing? In what markets do you plan expansion?


BYRNES

MILLER, Con-way Freight: Emerging areas that are hot today include China and Southeast Asia. These markets are growing not only as consuming nations, but also as strategic import and export locations. Not far behind in impact and growth opportunity are the European Union's traditional markets and Eastern Europe's emerging markets. These, too, are vibrant sourcing and distribution locations.


WILEMAN

JAY WILEMAN, President and Chief Executive Officer, GE Rail Services: The growing global middle class is changing production, transportation, and consumption patterns in hotspots such as Brazil, Russia, India, and China, as well as southern Africa and Eastern Europe.

ESCOTT, Schneider Logistics: The obvious emerging hotspots are in Asia, including China, Southeast Asia, and India. Eastern Europe is a strong player, too, and even Russia is a growing region for our business. Mexico, Central America, and South America are experiencing a resurgence because their supply chains aren't as long as other points of origin. Local markets in many of these regions are growing as consumer service areas emerge.

WILLIAM WASCHER, President and Chief Executive Officer, SEKO: Most of our customers source offshore in the Asia Pacific Rim and India. The Middle East and South Africa are emerging markets where SEKO will soon expand.

PAUL BYRNES, Director–Cargo Operations, Delta Air Lines: Delta's direct service between New York-JFK and Mumbai, as well as our expansion into the Middle East and Africa, affects the way people and freight move. Historically, aircraft had to connect over Europe, which slowed transit and impeded trade opportunities. Now, new market opportunities are developing on both sides of the Atlantic Ocean.

JIM RITCHIE, YRC Logistics: The Asia Pacific region will continue to be a growing trade lane. For China, the shift will continue northward and to the country's interior. There's also increasing focus on Vietnam and India in that region. India benefits from being an English-speaking country, which reduces the challenges of global sourcing. In Europe, the proximity and industrial development of Eastern Europe is expediting the growth of that sourcing hotspot. As South America's economies stabilize and strengthen, intra-trade in this region rises. There have also been trade gains between the region and China, particularly for minerals.

TOM JONES, Senior Vice President and General Manager, U.S. Supply Chain Solutions–Ryder System Inc.: Most companies are sourcing a blend of commodities based on manufacturing capability and complexity. There's often a stratification of product–some that you want to source locally, others that you want to source regionally in the lowest-cost country, and still others that you can truly source globally. Emerging areas include Russia and India, as well as Southeast Asian countries, such as Vietnam, that are developing manufacturing and consuming capability.

HANS HICKLER, Chief Executive Officer, DHL USA: NAFTA continues to provide opportunities for business in North America, and the Central American Free Trade Agreement and other programs offer untapped opportunities in the Western Hemisphere. Vietnam and Saudi Arabia's accession to the World Trade Organization (WTO) and China's continued implementation of its WTO commitments provide continued business opportunities in those countries. The strong growth in BRIC countries (Brazil, Russia, India and China) has created opportunities for many businesses.

Q

In light of the recent **China product-quality syndrome**, should manufacturers and retailers approach supply chain management differently?

WESTERMANN, TLC: China isn't the issue. It's not even about offshoring. It's about compromising your values in pursuit of lowest-cost solutions. You simply can't mitigate liability in the court of public opinion. Saving 10 cents sounds great to a procurement officer, but it's the CEO who must sit under the hot lights and explain why the company's product inflicted harm. No one will remember the dime saved or the more competent providers skipped over in pursuit of absolute low cost. A direct correlation can be made between firms with a cost-only mentality and incidents of sub-par quality.

ESCOTT, Schneider Logistics: The practice of inspecting products outside the United States will increase and problems will be caught before shipments leave their country of origin. Changes in how products are reviewed and approved in Customs are underway, with organizations asking to receive, inspect, and handle Customs clearance work before product even is loaded on the ship.

WASCHER, SEKO: Chinese factories need to address the quality debacle quickly or they'll find retailers aggressively searching for alternatives. 'Made in Japan' in the 1950s and early 1960s was synonymous with junk. When William Edwards Deming taught his statistical process controls to the Japanese, almost overnight the products coming out of Japan were markedly improved in terms of quality and real value. Manufacturers in China must drive similar changes in certain processes and establish the appropriate metrics to properly manage them.


JONES

Q

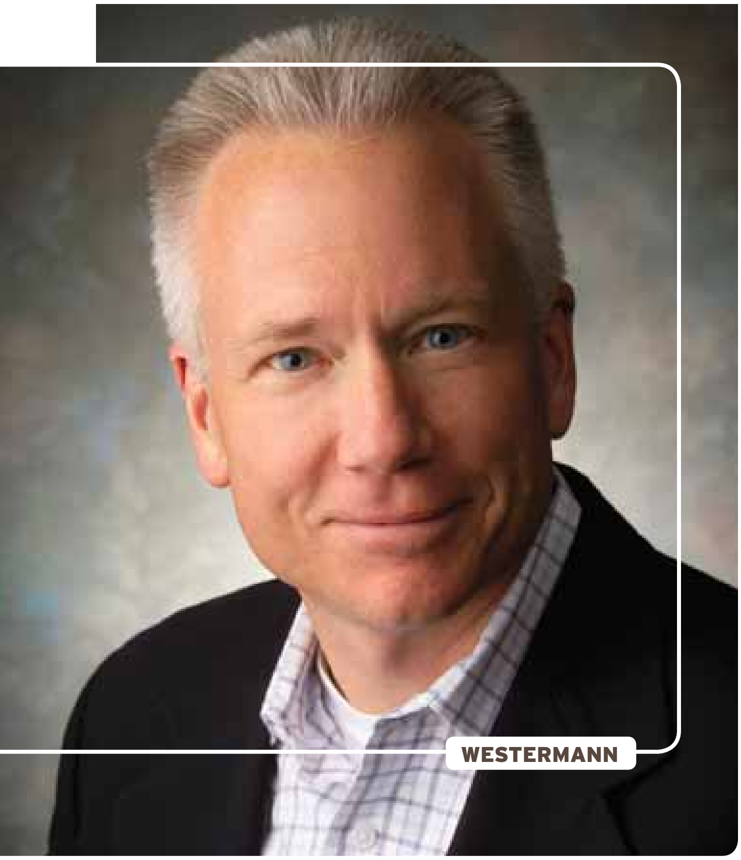
Given the potential pitfalls of operating globally, **what are some ways businesses can limit risk** and liability?

ESCOTT, Schneider Logistics: Companies can limit global risk and liability in three ways. First, when working internationally, treat your most trusted customers and suppliers as partners. That relationship and trust mean you're doing business with people you know can help drive your company's success. Second, intensely manage the financial side of all offshore opportunities to maintain control. Third, when going offshore, know that you'll be putting a lot of faith in leaders overseas who are forced to work independently. As such, it's imperative to select great leaders who will run the business as you would.

JONES, Ryder: Diversification is important in limiting risk. There should be a stratification of critical parts vs. non-critical parts. It's important to have multiple strategies depending on the criticality of the supply. Business should also, if possible, look at having multiple sources for the same product or commodity. Inject the cost of supply chain risk into the purchasing decision.

HICKLER, DHL USA: Businesses should demand that their supply chains be flexible enough to change shipping modes, open new shipping lanes, or redeploy resources on extremely short notice. They should pay attention to finding more effective ways to manage distribution, as well as think regionally, because the most creative solutions can often transcend national borders. More importantly, the fast-changing regulatory environment for international trade requires the resources to constantly monitor changes and new requirements involving duties, documentation, security, and rules of origin.

Q How can business logistics managers **flatten supply chain bullwhips** such as inventory, pricing, capacity, and labor?



WESTERMANN

WESTERMANN, TLC: Better access to deeper information and a framework to evaluate it will help. Planning that takes into account elements such as macro-economic data, sector analysis, crop yields, weather patterns, competitive responses, global politics, and energy disruptions is difficult to obtain, process, and evaluate–but it improves every year. With each advance, we move one step closer to reducing wild supply chain fluctuations through better planning.

MILLER, Con-way Freight: Bullwhips are a function of manufacturing capacity's ability to be flexible and respond quickly to demand surges and lapses. In the transportation portion of the supply chain, variability–wide swings in transit time performance–exacerbates this. Shippers can mitigate variability by using carriers that demonstrate an ability to operate consistent networks.

The best carrier model for reducing variability is a single, unified network with regional, interregional, and transcontinental service in one system with the capacity, resiliency, and responsiveness to meet demand swings and volume surges. When shippers experience demand surges, it's critical to have a carrier that can serve as a buffer and flex with the volume yet still deliver with high reliability and on-time standards. Otherwise, warehouse labor and inventory level planning goes out the window–one week no product arrives, the next week a month's worth arrives.

ESCOTT, Schneider Logistics: Lean logistics solutions that are more pull than push cause companies to react to actual demand rather than push a product into the marketplace. It's important to respond to true demand rather than artificial demand being pushed into the marketplace. When companies implement supply chain solutions based on true demand, the supply chain operates more effectively.

We continue to see, however, an emphasis on promotions during the year that help achieve sales objectives. These promotions can be effective, but it's necessary to design solutions that consider peak requirements and preplan for the push in the supply chain. It won't always be smooth sailing during big promotional pushes–especially during seasonal campaigns–so you need ways to manage these times effectively throughout the year.

RITCHIE, YRC Logistics: The better the planning and control processes, the more opportunity you have to avoid the bullwhips. Visibility is an enabler of planning, and the key to visibility is accurate, detailed, and timely data in a format that you can use.

WASCHER, SEKO: In order to flatten supply chain bullwhips, you first need to understand what's driving customer demand and inventory consumption. The most effective way to smooth out the oscillations in these operating procedures is via timely and accurate information used to manage and compress cycle times.

JONES, Ryder: Advanced planning and leveraging technology are key. Logistics partners' planning activities should be fully integrated with their customers' businesses. Obviously, movement in one area of the supply chain requires adjustments in another area, so even the smallest changes have a ripple effect. Creating a great plan supported by technology, and having the ability to adjust the plan quickly with new input, allows shippers to proactively manage the supply chain with more predictable results.

Q What is your company doing to drive supply chain sustainability? Is there a true business case for greening the supply chain or **is it just a buzzword?**

MILLER, Con-way Freight: There's no reason why sustainability efforts can't align with and complement good business practice. Things we do in the name of sustainability can also have a clear, measurable, and positive effect on the bottom line. Government policies and initiatives can encourage and incent these practices.

WASCHER, SEKO: The greening of the supply chain should be a common goal of the industry. Unfortunately the ultimate driver of greening is capital investment–when governments legislate it or consumers mandate it.

WESTERMANN, TLC: We've always practiced sound energy conservation and recycling programs–we just didn't call them 'green.' Today, sustainability has a seat at the table. We address it regularly with customers and adjust our operating environments to meet their sustainability requirements. Both competitive pressures and marketplace perceptions will drive every major company to factor sustainability into future supply chain equations.

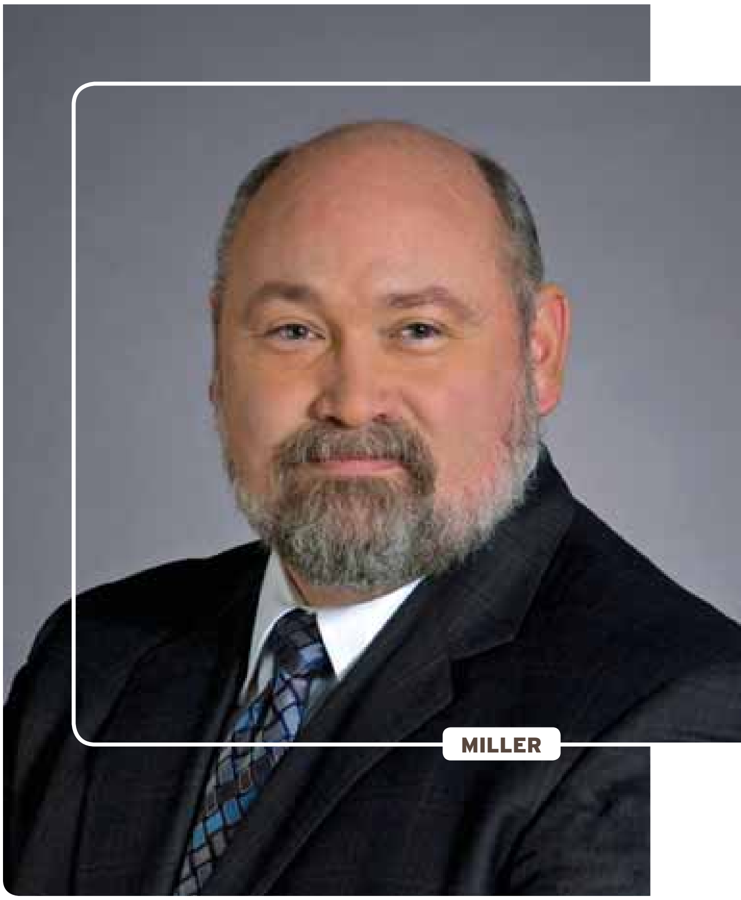
ESCOTT, Schneider Logistics: There's most certainly a sustainable business case for greening the supply chain. The motor carrier-based SmartWay program supports green initiatives by decreasing fuel emissions, thus creating a cleaner environment. 3PLs help companies transport product more efficiently and cost effectively through optimization processes. Our business is all about reducing transportation and its uses, which in turn leads to less fuel usage and emissions reduction. We also help shippers use returnable container solutions instead of packaging, which reduces landfill requirements.

RITCHIE, YRC Logistics: We've developed an emissions modeling tool that allows us to measure our clients' emissions footprint across all transportation modes. We then collaborate with clients to develop a strategy that reduces their emissions through modal shifts, provider selection, consolidation, and reusable packaging, or offset their emissions through programs that support cleaner air.

CRINKS, IAS: We drive supply chain sustainability by providing services that help companies make more effective use of their current 'land footprint'–ocean terminals, depots, and truck facilities. Our software helps companies match the supply and demand of empty equipment and automates the issuance of dray movements, eliminating the need to move empty container equipment in and out of terminal facilities. In turn, this enables companies to process greater throughput at existing facilities and reduce corresponding traffic congestion, pollution, and stress on our natural resources.

Q Given recurring market constraints—capacity, labor, and costs—what do you see as **the most important logistics IT development** in your sector?

MILLER, Con-way Freight: Advances will be in analysis software and decision-support systems that can mine vast amounts of data and help businesses use the information strategically and effectively for managing the supply chain and meeting customer demand. Going forward, these emerging systems—and the carriers with the knowledge and skill to best employ and leverage them—will be the critical element and where cutting-edge thinking in our industry happens.



WESTERMANN, TLC: Transportation management system platforms continue to improve, do more, and link to larger segments of the supply chain. Today, a small to mid-sized shipper can enjoy the benefits of a multi-million-dollar platform for pennies on the dollar compared to just a few years ago. As more companies move to multi-shipper platforms, these resources will have a compounding impact on network efficiency. Firms that don't participate will find themselves at a strategic disadvantage.

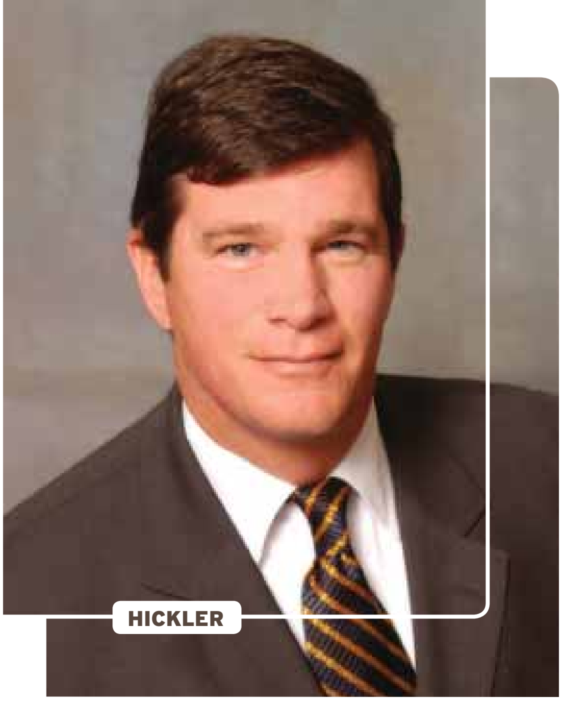
GREG HUMES, President, National Logistics Management (NLM): On-demand shipment management systems give 3PLs, shippers, carriers, and brokers the power to create online collaborative networks to manage their customers' shipment activity. Leveraging an online, on-demand resource not only drives a common platform across customers and brings down labor costs, it also can increase capacity because of the opportunity to draw from a larger carrier network.

ESCOTT, Schneider Logistics: Shipment and product visibility lie at the heart of success in the global marketplace. Tools that enhance global visibility allow companies to make informed decisions and point them to options when shipping problems and challenges arise. Emerging applications, such as the RFID pilot EPCglobal is conducting, could help generate end-to-end visibility and delivery confirmation for high-value products.

HOLMES, UPS Freight: IT has transformed what has always been a rigid transportation network into one that examines volume and cube to determine the most efficient route structure, making maximum use of capacity every day. This analysis creates a new, dynamic load plan, providing the ability to bring more freight into the system without over-extending a company's ability to effectively meet customer demands and needs.

RITCHIE, YRC Logistics: Everyone wants one system that will deliver data in a consistent structured manner. Our industry doesn't work that way. The combinations and permutations of the supply chain are unlimited. Logistics

IT development needs to move to a phase where we embrace the industry's flexibility and creativity instead of trying to create process workarounds to fit the IT configuration.


HICKLER

BYRNES, Delta: The best technology developments are those that help increase revenue by improving throughput, reducing costs, and automating functions that were historically performed manually. Dimming and re-weighing machines allow us to better manage our volumes and revenue quickly and efficiently. Future industry advances and improved security screening technology will also be beneficial.

CRINKS, IAS: Inexpensive and easily-accessible technological solutions in daily operations, such as subscription- and transaction-based software services and GPS-enabled phones, help achieve two goals. First, they considerably reduce the cost of IT operations so every participant in the transport chain can leverage world-class services to fuel the information interconnectivity necessary for maximum efficiency. Second, they drive more cost-effective logistics and transport decisions by enabling real-time visibility and updates, streamlining communications that eliminate legacy manual work processes, and optimizing execution.

WILEMAN, GE Rail Services: The ability to remotely track and monitor assets, as well as the content of those assets, can provide increased safety, security, and productivity throughout the supply chain. Another key advancement is the ability to connect data streams between multiple supply chains. If well-integrated, this information can lead to lower costs and increased productivity.

HANS HICKLER, Chief Executive Officer, DHL USA: IT gives us the ability to get closer to and engage with customers by linking their systems and sites with ours. By getting data to customers in real time, we can provide service and contain costs. Toward this goal, logistics providers must create easy and cost-effective e-business solutions for shippers.

Q In down times, partnerships are in; in up times they're out. **How can shippers and service providers create long-term partnerships** that address/accommodate pricing fluctuations?

JONES, Ryder: Work together to set attainable financial targets, and understand each other's cost drivers and success factors. Jointly establish budgets so expectations are agreed upon up front.

WESTERMANN, TLC: The structure needs to change. The old winner/loser model was never sustainable and led to on/off partnerships. In the new model, shippers must promise volume in return for carrier commitment to investment and efficiency. These relationships create a foundation for additional volume, resulting in new efficiencies that benefit shippers and carriers alike.

BYRNES, Delta: We develop long-term, in-depth partnerships with our freight forwarders. Prices will fluctuate, but how we work together on co-location agreements, sales efforts, and solving difficult logistics challenges for shippers makes the difference.

VOICES OF EXPERIENCE

PAUL BYRNES, Director, Cargo Operations, Delta Air Lines: For the past 12 years, Byrnes has held planning and operations leadership roles in the airline and transportation strategy consulting industries with Delta Air Lines and Accenture. He earned a bachelor of science degree from Providence College and a masters of business administration degree from the University of Notre Dame.

PAUL CRINKS, Chief Executive Officer, International Asset Systems (IAS): Based in Oakland, Calif., IAS provides equipment management and tracking services to ocean container transportation companies in all parts of the transport chain. Crinks has more than 20 years experience in the container shipping industry.

TOM ESCOTT, President, Schneider Logistics: Green Bay, Wisc.-based Schneider Logistics provides transportation management, freight payment services, transloading, freight forwarding, and customs brokerage services. Escott, who earned a bachelor of science degree in aeronautical engineering from Princeton University and a masters of business administration degree from Harvard University, joined the company as president in 2003.

HANS HICKLER, Chief Executive Officer, DHL USA: Hickler joined DHL in 2004 as Executive Vice President of Strategy and Business Implementation in the United States. DHL USA, headquartered in Plantation, Fla., offers express, air and ocean freight, overland transport, and contract logistics solutions as well as international mail services. The company's international network links more than 220 countries and territories worldwide.

JACK HOLMES, President, UPS Freight: Holmes began his UPS career in 1979 as a part-time employee. He served in various operations, engineering, and safety assignments in Alabama, Georgia, Utah, and in the Chicago area before being named president of UPS Freight, headquartered in Richmond, Va., in 2007.

GREG HUMES, President, National Logistics Management (NLM): Humes joined the Detroit, Mich.–based transportation management and solutions company as president in 2006, bringing 25 years of logistics industry experience. NLM manages shipments using Web-based bidding, scheduling, shipping, and tracking technology.

TOM JONES, Senior Vice President and General Manager, U.S. Supply Chain Solutions—Ryder System Inc.: Jones, who joined Ryder in 1988, leads the automotive, fast moving consumer goods/retail, high-tech and electronics, and industrials and utilities industry sectors for the Supply Chain Solutions business segment. Ryder's supply chain solutions encompass lead logistics management, inbound manufacturing product flow, integrated logistics, and network design.

DAVID MILLER, Chief Operating Officer, Con-way Freight: Headquartered in Ann Arbor, Mich., Con-way Freight is the less-than-truckload subsidiary of Con-way Inc., which also operates Menlo Worldwide Logistics, Con-way Truckload and CFI. Miller handles day-to-day management for all operations and strategic planning for Con-way's largest business unit, including business planning, process management, technology initiatives, enterprise security, properties, and fleet maintenance.

JIM RITCHIE, President and Chief ExecutiveOfficer, YRC Logistics: Ritchie has more than 25 years experience in the logistics industry. Prior to joining YRC Logistics, Ritchie served as president and CEO of both Yellow Global and Transportation.com. YRC Logistics, a subsidiary of YRC Worldwide, provides distribution, global, and transportation services from its headquarters in Overland Park, Kansas.

WILLIAM WASCHER, President and Chief Executive Officer, SEKO: Headquartered in Itasca, Ill., SEKO provides air and ocean freight services, domestic and transborder ground services, customs brokerage, home delivery, and IT solutions. Wascher, who joined SEKO 25 years ago, previously served the company as Director of IT, Accounting Manager, and CFO.

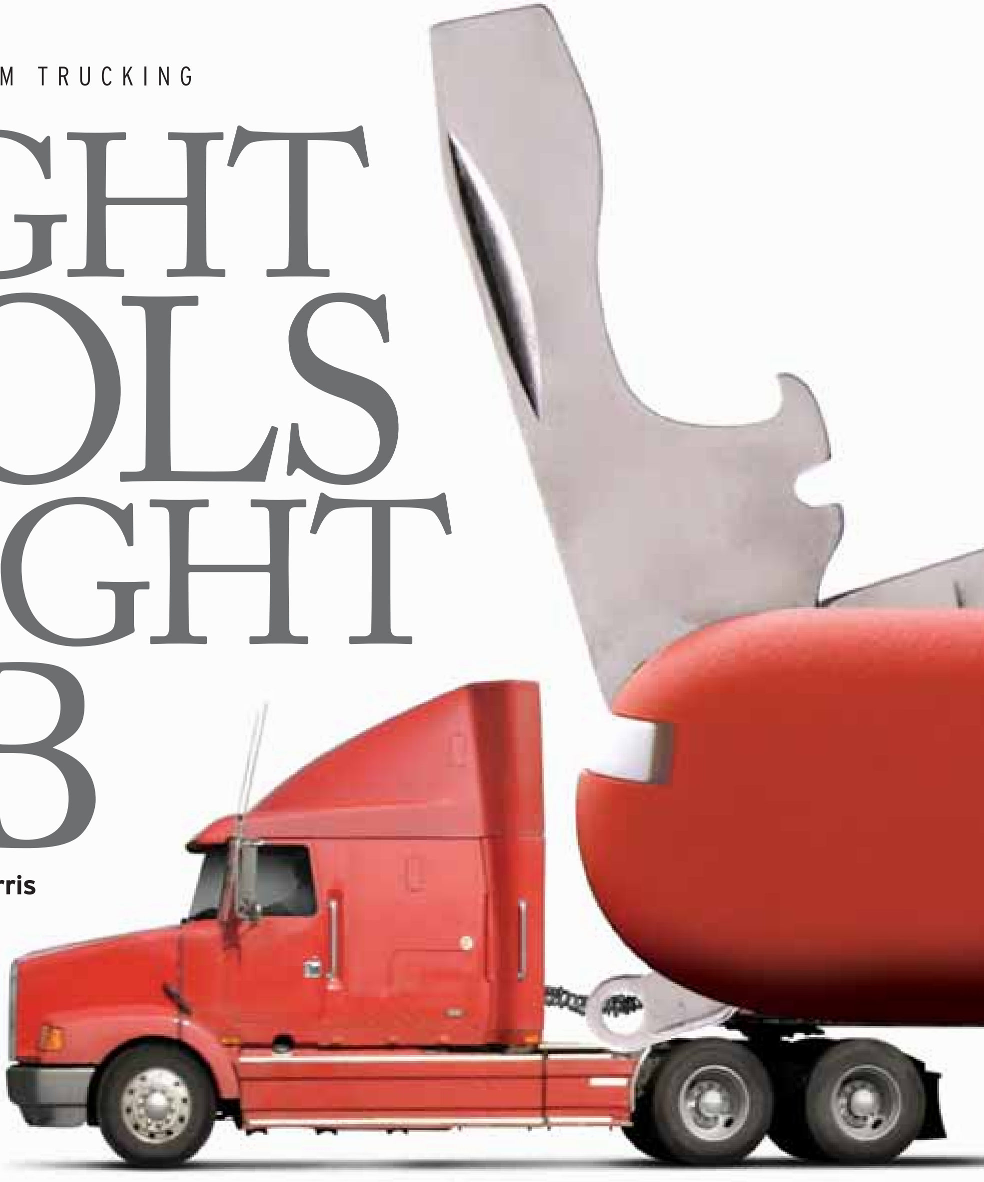
PETE WESTERMANN, Chief Operating Officer, Total Logistic Control (TLC): Westermann, a graduate of the University of Wisconsin Milwaukee, joined TLC in 2006 as COO with more than 26 years of experience in the logistics industry. The company provides end-to-end solutions in distribution, transportation, manufacturing, and packaging to retail, grocery, consumer packaged goods, and food sectors.

JAY WILEMAN, President and Chief Executive Officer, GE Rail Services: Since 1994, Wileman has held positions in engineering, manufacturing, and services for GE in the United States, Japan, and Italy. In his current role, he's responsible for expanding new areas of globalization and developing new service offerings for Rail Services.

PREMIUM TRUCKING

The RIGHT TOOLS for the RIGHT JOB

by Gregory DL Morris



For many high-value shippers, enhanced efficiency, customer service, and profitability offset the cost of investing in DCC, white-glove, and last-mile services.

Perceptive transport buyers recognize that sometimes their business can benefit from paying a premium price for premium service. Shippers of high-value merchandise such as pharmaceuticals, furniture, and fine fabrics call on the expertise and resources of premium service providers to penetrate new markets, handle unusual situations without disrupting normal supply chain activities, and ensure security by providing sealed trailers and satellite tracking.

Transport buyers weigh the extra expense of these services against the reliability, consistency, technology, security, and ease of use they afford. For high-value commodity shippers, the primary goal is not to save money on transportation, but rather to use premium trucking services to boost

efficiency. Ultimately, that's an investment in their company's success.

A wealth of top-shelf service options are available to meet shippers' needs. Premium service providers fall into four general categories: specialized carriers and 3PLs that only provide premium services; line-haul truckload or LTL carriers that also offer enhanced services; small-package delivery firms that are moving into freight; and van lines expanding from their base of providing household moving services.

One irony of premium trucking services is that drivers don't spend much time driving. "Our drivers only spend about 25 percent of their time behind the wheel," says Will O'Shea, executive vice president of sales and marketing for 3PD, a last-mile services provider based in Marietta, Ga. "They spend the bulk of their time in the consumers' homes.

"We arm drivers with shipper-specific installation training," he says. "Our teams are certified for assembly, touch-up, and light repair."

Shippers who begin working with a premium services provider such as 3PD may soon find themselves sharing more of the load with their new partner by turning over logistics concerns and customer interactions.

"We can handle routing, scheduling,

"We never buy just transportation.

Service is paramount. The lowest rate does us no good if the carrier doesn't deliver."

–**Joe Estrella,** director of transportation and logistics network, CVS

and scanning for the shipper," says O'Shea. "Shippers look to us to provide more than just execution. They want to leverage our technology, especially the small shippers. They also expect a return on investment because they are offering free delivery to their customers."

From furniture importers and pharmaceutical manufacturers to national retailers such as CVS Pharmacy and Carvel Ice Cream, here's a look at how shippers use premium trucking services to enhance efficiency and profitability.

CVS DEDICATED *to* DCC

Dedicated contract carriage is the premium service of choice for national drugstore chain CVS Pharmacy, based in Woonsocket, R.I. CVS relies on 14 distribution centers to serve its 6,200 retail outlets. The company's proprietary fleet handles inbound traffic at six DCs, while Miami, Fla.-based logistics service provider Ryder System supplies seven DCs under a dedicated contract carriage (DCC) arrangement. A different carrier handles shipments from the remaining distribution center under a separate dedicated contract.

CVS carefully considered its service needs when it rationalized its national distribution system last year. Although the company operates nationally, each of its 14 distribution centers put out a separate request-for-proposal (RFP) for its store deliveries.

"We sent RFPs to about 35 transportation service providers," says Joe Estrella, director of transportation and logistics network for CVS. "Then we whittled the list down to five. Ryder stepped up and earned the business separately for each center it serves."

Reliability, not price, is CVS' most important criterion when choosing a carrier. "We never buy just transportation," Estrella says. "Service is paramount. The lowest rate does us no good if the carrier doesn't deliver."

CVS has grown its business both organically and through acquisition. With each expansion, its logistics requirements change.

"For example, a few months ago we had to change the distribution centers that were serving several stores in Michigan and Illinois," says Estrella.

That situation created additional work for the DCs called on to serve the new stores, and put pressure on the carrier.

"People talk about seamless transportation, but in this case it was true," says Estrella. "The stores that were served by new DCs didn't notice any difference. That's the key to smooth logistics operations. Some employees at those stores still don't know that the trucks and drivers belong to Ryder, not CVS."

What's more impressive is that the distribution center shift took place in the middle of the company's normal, demanding delivery timetable.

"We will work 142,000 store routes this year, making 365,000 individual store deliveries – all on a stringent schedule," Estrella says. "The driver must make the first delivery on a route within a 15-minute window, and make all subsequent stops within 30 minutes."

Some premium service providers help high-end retailers keep a low profile. National Retail Systems, for example, moves goods in NRS-branded trucks and discreetly labeled cartons.

The DCC arrangement seems to be working well for CVS. "Through November 2007, our deliveries were close to 99 percent on-time nationwide on the first stop, and better than 96 percent on-time for subsequent stops," reports Estrella.

Dedicated resources play a key role in CVS' partnership with Ryder. "More than 400 employees serve on the CVS team," says Ed Caulfield, director of customer logistics for Ryder. "We operate

600 vehicles, primarily tractor-trailers branded with the CVS logo.

"We also run special equipment for deliveries to cities that are hard to get into, such as New York. We try to maximize available cube at minimum cost."

While CVS handles its own routing and scheduling, Caulfield's group takes a final look at the routing logic to help keep expenses down.

"Small changes can yield big results," he notes. "The key benefit we bring to CVS is the ability to react quickly, redeploying assets to optimize its supply chain."

This kind of partnership is a major strength of dedicated contract carriage. "We want to understand and anticipate our clients' asset and service requirements," Caulfield says.

That's the philosophy embraced by Rosario Rizzo, senior vice president and general manager of Ryder DCC, after years spent on the shipper side of the dock working for Compaq and PepsiCo.

"The irony of logistics and supply chain execution is that when it's perfect, no one notices," Rizzo notes. "Only when there's a problem does it get attention. But that's the true value of premium service providers. We serve our customers' customers."

FedEx Custom Critical's white-glove premium services provide temperature control and security to meet shippers' specialized needs.

SAFE *and* SOUND

For Three Rivers Pharmaceuticals, Cranberry Township, Pa., white-glove premium services with an emphasis on security and tracking are not just a nicety but a necessity. The company, which performs contract manufacturing at several plants around the country, has an extra incentive for investing in premium services: If something goes wrong, lives – not just money – are at stake.

"We do not want to lose control of our shipments," says Matt Rumpler, director of operations. "We're concerned about drug counterfeiting, so we seal the back of the truck when the shipments are loaded, and the recipient breaks the seal at delivery. We use FedEx Custom Critical for that inventory control door to door."

Because he's confident in FedEx's reputation and commitment to quality, Rumpler considers the service provider's white-glove offering a good investment.

"Some carriers outsource to independent drivers, but FedEx uses its own trucks and drivers," says Rumpler. "I inspect all the trucks at the dock and they are clean and reliable. We have some very tight deadlines, and FedEx can meet them."

Rumpler also appreciates that the service provider keeps Three Rivers informed about delays or service disruptions.

This constant exchange of information typifies FedEx Custom Critical's service. "Great communication allows for great custody and control," says Virginia Albanese, president and chief executive officer for the FedEx division, based in Green, Ohio.

FedEx Custom Critical's white-glove premium services provide temperature control and security for shippers moving sensitive products. The carrier offers two levels of temperature control: TempAssure, with fixed high and low points, and Temperature Validated, a guarantee within two to eight degrees Celsius, validated by a recorder in the box and a satellite monitor.

"Shippers that need extra security can get dual-driver protection, satellite motor surveillance, even an escort," says Albanese. "These security services are hands-on and closely controlled."

It's that assurance of control that Three Rivers most values.

BUILT *for* COMFORT

Agio International, based in Virginia Beach, Va., imports more outdoor furniture than any other company in the United States. Agio relies on white-glove, last-mile services from Arkansas-based ABF Freight System when its premium

Agio International relies on ABF Freight System's premium turnkey services for delivery and set-up of high-end outdoor furniture in the consumer's home.

fixtures, such as stone-top tables and propane barbecue pits, need warranty replacements.

Goods arrive at East and West Coast ports, and are delivered by rail, truckload, and LTL carriers to most major retail chains.

"The stone-top tables we sell weigh about 200 pounds," says Bobby Dowell, director of customer services for Agio. "Their heavy weight requires two-man delivery, set-up, and removal of the old table in the home. The outdoor fire pits are also heavy. The drivers currently assist in some deliveries but don't do any set-up yet. Our customers have asked for it so we are working with ABF to find a way to get it done."

If that sounds more like a partnership than a client-provider arrangement, there's a reason. Agio has relied solely on ABF to handle warranty replacement deliveries for the past seven years. "We did try another carrier, but that lasted only one month," Dowell says. "The carrier promised a lot but didn't deliver."

All replacement goods are imported to a 100,000-square-foot warehouse in Virginia Beach, from which deliveries are made around the country. "ABF manages the scheduling and sends an invoice for every delivery," says Dowell. "We're looking into package pricing, but so far ABF has been fair and competitive on cost."

As Agio's needs grow, ABF will be ready to meet them, says Russ Aikman, manager of ABF's Turnkey by Request premium services. "The Turnkey service includes delivering the shipment to the consumer's home. We can add unpacking, light assembly, light installation, and packaging removal services," he says.

ABF's premium services make light work of Agio's heavyweight shipments.

The ESSENTIAL LINK

While many major retailers have built direct-to-consumer business on the foundation of reliable premium services from carriers, a new crop of shippers has developed a business model centered around special deliveries into the home.

"About 80 percent of our shipments are white-glove, inside-the-home deliveries," says Ronald Drenski, director of logistics for Masco Retail Cabinet Group, Middlefield, Ohio. The company tasks Cardinal Logistics Management, Concord, N.C., with these duties.

"Our business is kitchen, bath, and home office cabinets," says Drenski. "After we build the cabinets, we provide Cardinal Logistics with details on each delivery–what type of truck it will need,

> "The irony of logistics and supply chain execution is that *when it's perfect, no one notices.* Only when there's a problem does it get attention."
>
> –**Rosario Rizzo,** senior vice president and general manager, Ryder DCC

or whether the delivery is to a room up five flights of stairs. So far, the delivery does not include installation, but we're considering it for the future."

Drenski frequently receives bids from other delivery service providers. "Carrier sales reps are lined up outside my door," he says. "But you have to be careful to choose a carrier that delivers what it promises. The delivery puts my brand in the marketplace. My customers pay for service, and if there's a problem with delivery, they expect to call someone who cares."

In some cases, the carrier calls the consumer directly. "Cardinal makes 1,200 cabinet deliveries every day, and nearly 99 percent arrive on time," Drenski says. "But with that volume of deliveries, some kinks – traffic, roadwork, bad weather – occur every day. We rarely encounter a problem that elevates past the local level. If a delay occurs, the Cardinal driver calls the consumer, and we're updated on that communication."

Carvel's BIG CHILL

Since the company opened its doors in 1934, Carvel Ice Cream's products have gained a loyal following–as evidenced by their distribution to more than 500 Carvel stores and 8,500 supermarkets nationwide. The ice cream company relies on dedicated transportation services to handle its specialized distribution needs.

While expanding Carvel's geographic presence from 25 states in 2002 to nearly all 50 states today, the company encountered trouble with its approach of using two different transportation providers to deliver its perishable products. Customers reported drivers arriving on-site without uniforms and, worse, unresponsive to the customer's concerns. A lack of replacement personnel to fill in for drivers who called out sick resulted in delivery delays, as did malfunctioning equipment such as refrigerated trailers operating at improper temperatures.

Tired of mediocre service, Carvel hired AmeriQuest Transportation and Logistics Resources of Cherry Hill, N.J., a provider of comprehensive fleet management services in the United States and Canada, to find a transportation partner who could service its specialized distribution needs. AmeriQuest, which later merged with Oakbrook Terrace, Ill.-based NationaLease and now operates under that name, called on All Services Leasing (ASL) of Williamstown, N.J., to provide dedicated transportation services, including drivers, and tractors and trailers for distribution.

In transit, Carvel ice cream cakes, manufactured by Celebration Foods of Rocky Hill, Conn., demand a temperature of minus 20 degrees. The majority of the ice cream goes directly from the ASL refrigerated trailer into Carvel route sales representative (RSR) trucks using racks on wheels across a custom ramp connection.

Carvel uses up to eight dedicated drivers, tractors, and trailers weekly. ASL's multi-stop, and sometimes multi-state, delivery routes created a challenging dedicated transportation delivery program. Drivers constantly deal with the vagaries of weather during the transfer, battling the elements to maintain their delivery schedules with a demanding frozen product in tow.

To prevent problems and unmet expectations, Carvel RSRs, ASL's

Because of their temperature sensitivity, Carvel's ice cream products move directly from the ASL refrigerated trailer into dedicated route trucks using racks on wheels.

dedicated drivers, the transportation and maintenance team, the Carvel cake creation center, and the corporate office engage in solution-centered teamwork and constant communication.

"We promised Carvel we'd operate like their in-house transportation partner," says Michael L. Oetjen, then director of national sales for AmeriQuest. "We test routes and vehicle utilization annually, taking into consideration the 'what-ifs' as the company grows, and we recommend the most efficient service, equipment, and manpower approaches to meet their needs."

Carvel estimates that in the past three years, the ASL and NationaLease transportation delivery program has reduced cost-per-unit by 10 to 15 percent. "We get the most hours and miles out of these drivers and move more product through the dedicated program," says Victor Perry, director of logistics, Celebration Foods/Carvel Ice Cream.

Carvel's business will soon change dramatically when it opens a new production facility. "That growth will bring many logistical challenges," Perry says. "We'll be looking to partners like ASL and NationaLease to help us work through the transition by adding drivers, equipment, logistical analysis, and other support resources to ensure that we make this change as efficiently as possible."

Perry emphasizes that Carvel's strategic partners have always endeavored to create a win-win situation for both sides. "It's not me always cutting the rates and demanding more, and it's not them always looking for increases or turning down business that's not as profitable," he says.

As in the case of NationaLease's and ASL's partnership with Carvel, carriers that continue to expand their premium service offerings will become an indispensable part of shippers' processes. Carriers grow their businesses, and shippers get service they can count on from experienced partners. That's an arrangement that benefits both sides. ■

At Your SERVICE

The ever-expanding range of premium options that shippers request has encouraged many carriers to venture into new service areas.

Once focused on interstate trucking, Yellow Freight and Roadway, both owned by Kansas-based YRC National Transportation, are adding to their assets and systems to support premium service offerings.

"White-glove and last-mile services have been growth areas for both Yellow and Roadway," says Troy Matthews, vice president of marketing for YRC. "We're supporting that expansion by adding resources and labor to the delivery end of the business, including heavy assembly.

"The trend toward manufacturers shipping direct to consumers spurred this growth," he notes. "We now deliver exercise equipment, home appliances, indoor and outdoor furniture – anything a consumer can buy online. Shippers can bypass the distribution center, or we can accommodate the DC in our system."

YRC recently improved its premium services system-wide to reduce inefficiencies and costs. "We added new equipment with lift gates and brought in a select group of partners to help meet shippers' technology demands," Matthews says. "We currently deliver to 48 states, and plan future service into Canada. We predict an increase in Canadians buying goods online from the United States."

Putting logistics tasks in the hands of premium service providers relieves shipper s of responsibilities such as warehouse management and distribution.

PREMIUM ON DEMAND

UniGroup, the Missouri-based parent of United Van Lines and Mayflower Transit, also wants to play a bigger role in premium markets. "Both United and Mayflower have offered premium services upon request but we haven't promoted them," says Tom Duwel, vice president of special products at UniGroup. "Now we're being more proactive."

A new premium offering called Zero Hour makes express service available to UniGroup shippers. "This service lets us handle time-specific shipments for just-in-time deliveries," notes Mike Griffin, director of LTL special products operations for UniGroup. "Pad wrap and lift gate are our expertise. We're adding one driver non-stop to destination. We also make a driver team available when required so the truck never has to shut down. The target markets for this service are trade shows, automotive, manufacturing, and some niche medical."

To support the Zero Hour service, a new call center went live on Dec. 3, 2007, and booked its first business the next day.

TRAVELING INCOGNITO

While some shippers want their carriers' vehicles to show their logo, the high-end Manhattan department and specialty stores served by National Retail Systems (NRS), a logistics service provider based in Secaucus, N.J., do not. Given the high value of the consignments, these retail shippers appreciate the anonymity afforded by transporting their goods in trucks branded with the NRS logo.

"We deliver to thousands of retail outlets," says Larry Ravinett, senior vice president of logistics and supply chain solutions for NRS. "We stock the shelves, and in some cases have the keys to the store. We own custody and fiduciary responsibility for these goods."

TARGETING NEW INDUSTRIES

Ryder System's Dedicated Contract Carriage (DCC) division plans to boost its investment in technology.

"We are aiming for the high level of connectivity that's necessary to run a proactive, nimble supply chain," says Rosario Rizzo, senior vice president and general manager of Ryder DCC. "We also plan to expand our white-glove expertise to serve the construction and high-tech industries. And adding the capability to do simplified repairs on site is on our radar screen."

It's not easy being

GREEN IS THE =

But, driven by impending regulations, consumer pressure, and mandates from corporations such as Wal-Mart, more and more companies are forging ahead with **supply chain sustainability** efforts.

= NEW BLACK

By Amy Roach Partridge

APRIL 2007: Stanford Business School's Center for Social Innovation sponsors a "Socially and Environmentally Responsible Supply Chains" conference, featuring corporate giants Starbucks, Wal-Mart, Disney, Gap, Timberland, and Hewlett-Packard discussing their efforts to make the supply chain more environmentally friendly.

SEPTEMBER 2007: The first U.S. carbon footprint event, "Measuring and Reducing Your Carbon Footprint," takes place in Chicago. Firms including Nestle, Aveda, Nike, Intel, and Pepsi are on hand to share their experience in reducing carbon footprints across the supply chain.

OCTOBER 2007: The annual Council of Supply Chain Management Professionals (CSCMP) conference in Philadelphia dedicates an entire track to supply chain sustainability, featuring case studies of green supply chains from Herman Miller, Whirlpool, Campbell Soup, and Stonyfield Farm.

Clearly, the green movement has hit the logistics sector. Supply chain professionals across all industries today are tasked with helping their companies improve supply chain sustainability and become more environmentally friendly. From reducing carbon footprints to retrofitting warehouses and minimizing transportation routes, greening the supply chain is no longer a fringe movement, but rather an integral part of many companies' strategic plans.

"The advent of sustainability–like the 1970s energy crisis or 1980s threat of low-priced, high-quality products from Japan–has vaulted supply chain management into the corporate spotlight," says Tim Minahan, senior vice president of marketing for Procuri, an Atlanta-based supply management solutions provider that helps companies meet internal sustainability goals.

Indeed, TV and magazine ads are rife with companies touting their environmental commitments, and corporate initiatives around sustainability are becoming commonplace. Among Fortune 100 firms in America, 21 have published sustainability reports, 44 have published corporate social-responsibility reports, and 63 maintain Web pages devoted to sustainability or the environment, according to the Center for Logistics Management at the University of Nevada, Reno.

AN EMERGING CONCERN

The supply chain is in the early stages of its green makeover, however. "In many ways, supply chain sustainability is still an emerging area," says Adrian Gonzalez, who chaired the sustainability track at the CSCMP conference and is director, logistics executive council at Dedham, Mass.-based ARC Advisory Group. "Many companies are just beginning to get involved in sustainability efforts. They're developing their plans and trying to get a sense of what others are doing."

For many companies planning sustainability efforts, cost is the looming question: Will we be able to meet our green goals while holding on to the green that makes up the bottom line? Will customers pay more for our goods because they're produced in an environmentally friendly manner? Will sustainability efforts pay off in the long run?

Cost can be a roadblock–it's sometimes tough for businesses to balance doing what's good for the planet with doing what's good for the company.

"Companies know what the 'right' thing is from an environmental standpoint, but we operate in a consumer-driven economy," says Gonzalez. "Businesses are geared and structured to be profitable, but some environmentally friendly strategies contradict that," says Gonzalez.

An increasing number of companies, however, see sustainability and profitability as mutual goals. They often embrace green supply chain initiatives as part of a larger strategy to factor sustainability into practical business plans that help the environment and contribute to the company's growth and success.

"Part of sustainability is sustaining the company. If we can't make money, we won't be around to be the good guys for the environment," says Drew Schramm, senior vice president, global supply and quality for furniture maker Herman Miller, Zeeland, Mich.

For Herman Miller, being around to be the good guys means carefully weighing cost-cutting against sustainability goals. While the company passed up the chance to save $2.4 million by replacing the metal components in one of its cubicles with PVC because of the detrimental effect on the environment, it doesn't always choose the greenest route.

"Sometimes we can't make the environmental changes we want to if it means costs rise to a point where customers are not willing to pay for it," says Schramm. "It's a balancing act."

Many initiatives companies have already implemented in the name of supply chain efficiency can be translated into sustainability efforts, making it easier to go green. To help reduce the cost and increase the reliability of transportation, for example, many companies have implemented transportation management systems (TMS) to minimize the number of routes and consolidate shipments into single truckloads.

"Companies have been optimizing transportation for years to save money, but from a green perspective, fewer trucks on the road also equals less fuel consumption and lower CO^2 emissions," says Gonzalez.

Supply chain sustainability efforts sometimes repay the favor–changes businesses make under the banner of

Benefits of Designing for the Environment

ENGINEERING GOAL	ENVIRONMENTAL IMPACT	COST REDUCTION
Reduction in parts, product size, weight	Less end-of-life waste, less energy consumption	Lower direct-materials costs, higher production yields, lower logistics expense
Energy efficiency	Reduced greenhouse effect, reduced energy dependency	Lower end-user lifecycle operation expense
Increased product robustness	Longer service life, less material waste to landfill	Lower total cost of ownership to end user, lower shipping and handling costs
Packaging materials selection	Reduced landfill-bound material flow	Lower logistics costs
Bulk pack development	Reduced landfill-bound material flow	Lower logistics costs
Design for recycling	Reduced landfill-bound material flow; reduced raw materials consumption	Lower takeback compliance costs, lower materials handling costs, lower manufacturing conversion costs
Design for disassembly	Increased probability of proper dismantling and recycling rather than shredding	Lower recycling costs

Source: AMR Research

becoming green can help reduce costs and boost the bottom line.

"If a company reduces its carbon footprint, it uses fewer resources and less energy, so it ultimately cuts costs," explains Curtis Greve, executive vice president, GENCO, a third-party logistics provider headquartered in Pittsburgh, Pa.

GENCO's unique recycle-and-reuse program helps companies cut down on waste and earn revenue by either recycling or reselling end-of-life products. Last year on behalf of its customers, GENCO recycled 17 tons of office

Hewlett-Packard is well-known for its sustainability efforts. The computer giant works to minimize its environmental impact by reducing manufacturing waste and the use of hazardous materials, and auditing supplier facilities for compliance to green goals.

paper, more than 300,000 pallets, 4.2 million pounds of plastic, and 6.6 million pounds of metal. The company also sold approximately $1.4 billion in original retail merchandise on the secondary market.

"Keeping product in the commerce stream is a good way to recycle and eliminate disposal costs," explains Greve.

Cost-cutting, however, rarely serves as the primary motivation behind corporate sustainability efforts. Several factors drive the push for greener supply chains:

The Wal-Mart Effect. "The biggest driver of sustainability in the supply chain is Wal-Mart," says Greve. The retailer is leading the charge with its commitment to spend $500 million on sustainability efforts. In a landmark speech introducing its "Sustainability 360" program in 2005, Wal-Mart CEO Lee Scott pledged three major goals: to be supplied 100 percent by renewable energy, to create zero waste, and to sell products that sustain the environment.

Specifically, Wal-Mart has committed to reducing the energy needs of all existing stores by 20 percent by 2009; total CO^2 emissions by 25 percent by 2012; and packaging across its global supply chain by five percent by 2013.

As supply chain professionals know full well, any effort of Wal-Mart's ends up being an effort of its suppliers. Case in point: In February 2007, Wal-Mart implemented a scorecard evaluating

Corporate Do-Gooders

At Stanford Business School's "Socially and Environmentally Responsible Supply Chains" conference in April, some of the business world's best-known companies highlighted projected results of their various sustainability efforts. Here are some impressive stats:

In 2007, **HP will eliminate 30,000 cubic feet of polystyrene computer packaging and more than six million pounds of PVC packaging** from its inkjet printer business. The company will also reduce its carbon footprint by 20 percent by 2010.

Footwear and apparel maker **Timberland says it will achieve carbon neutrality in all its retail and production facilities by 2010.** The company has chosen to convert to renewable sources of energy, use green building techniques, and establish carbon offsets by planting trees in equatorial regions–where the vegetation more readily absorbs carbon.

Footwear manufacturer giant **Nike decided to remove a toxic compound from its core "Air" shock-absorption technology.** The environmental innovation did more than reduce waste. It was fundamental to a breakthrough alternative that allowed designers to insert full-sole-length Air in its new shoe, the AirMax 360.

To secure its 500,000 farmers a living wage and retain a skilled labor pool, **Starbucks pays its farmers 42 percent more than the going commodity price of Arabica coffee beans.** The company has also created fair-trade standards that exceed government standards and hired independent auditors to verify compliance.

Source: AMR Research

suppliers' packaging practices based on specific metrics including greenhouse gas/CO^2 per ton of production; product/package ratio; cube utilization; and amount of recycled content. The scorecard was rolled out to more than 60,000 global Wal-Mart suppliers as part of a one-year trial period, and in February 2008, the retailer will use the packaging scorecard to measure its entire supply chain.

FORTUNE 100 + SUSTAINABILITY

Of Fortune 100 firms, 21 have published sustainability reports, 44 have published corporate social responsibility reports, and 63 maintain Web pages devoted to sustainability or the environment. 35 companies are listed on the Dow Jones Sustainability Index.

"The implication to the broader business community is vast," says Procuri's Minahan. "If history is any indication, Wal-Mart's sustainability strategy will likely spur suppliers and other companies to develop, manufacture, and source in a more environmentally and socially responsible manner."

Regulations. While U.S. companies don't currently face nationwide regulatory compliance when it comes to environmental and sustainability standards, many in the industry say it's only a matter of time. Regulations in Europe–such as the Restriction of Hazardous Substances Directive, which curbs the use of certain ecologically harmful chemicals, and the Waste Electrical and Electronic Equipment Directive, which makes electronics manufacturers responsible for facilitating the safe disposal of used hardware–are already in full swing, impacting U.S. companies selling goods in Europe.

Closer to home, President Bush has proposed cutting U.S. gasoline usage by 20 percent over the next decade and is asking businesses to use more sustainable energy sources. Meanwhile, top corporations such as DuPont and General Electric are pushing for mandatory CO^2 emissions caps and the development and adoption of additional sustainable energy sources.

Why would companies voluntarily push for restrictions? Some experts say companies may be able to prevent more stringent government intervention by being proactive. "Supply chain managers need to take action to adopt environmentally and socially responsible supply practices today, before they're forced to tomorrow," says Minahan.

GENCO's Greve agrees: "If we wait, the government will come out with a solution that will end up costing us all money. Companies are saying, 'Why don't we lead the way and let the regulators follow us?'"

At the U.S. state and local levels, many environmental laws directly impacting the supply chain have already been passed. California's Air Resources Board, for example, has enacted air pollution regulations–including a recent proposal to reduce the pollution impact of cargo-handling equipment and ship auxiliary engines at the state's ports–that are among the strictest in the United States. Companies such as Herman Miller have come to view these regulations as an added cost of doing business.

"In order to comply, we had to create formaldehyde-free workspaces. It may cost us several hundreds of thousands of dollars, but we predict the same type of laws will show up in other states, so the effort is worthwhile," says Schramm.

Rising Fuel Prices. With oil costs hovering near the $100-per-barrel mark and the natural flow of the supply chain being what it is–placing goods on a truck and transporting them long distances to stores or other distribution channels–efforts to minimize the impact of rising fuel costs take front and center at many companies. Whether they are more interested in saving the planet or saving their cost structure, companies are finding that reducing their carbon footprint can help reduce fuel costs.

Many organizations are turning to fuel-efficient vehicles and/or alternative sources such as biodesel to help cut energy costs and boost sustainability.

UPS, for example, operates a large alternative fuel fleet, which includes more than 1,500 compressed natural gas, liquefied natural gas, propane, hydrogen fuel cell, electric, and hybrid electric vehicles. And FedEx's OptiFleet E700 delivery trucks, which began operating in 2004, use one-third less fuel than its other delivery vehicles.

Consumer and Investor Pressure. Perhaps no entity has more impact on environmental efforts than customers who can directly support or boycott companies whose policies they like or dislike. "Consumers can drive companies to change by speaking with their wallets," says ARC's Gonzalez.

This ethical tendency is making its way into the investment arena as well, with interesting consequences for supply chain operations.

For instance, a large investment group notified Campbell's that it might sell its stock if the soup company's sustainability efforts were not aligned with its socially responsible investment criteria,

according to Robert Shober, Campbell's director of infrastructure engineering and environmental programs.

TAKING ACTION

What can companies do to respond to these sustainability drivers and act as good corporate citizens while boosting profits and keeping goods moving effectively throughout the supply chain? "Start by identifying ways to eliminate waste, excess packaging, and shipping," advises Procuri's Minahan. "This reduces carbon footprint and also cuts costs."

Procuri client Kellogg's, for example, has implemented energy-management systems and procedures, including the use of heat recovery systems, at all its plants. The cereal and food giant recycles 80 percent of waste, including converting waste food to animal feed. Kellogg's also practices water conservation and is emphatic about packaging recycling and reduction programs, says Minahan.

Developing environmental and social responsibility guidelines, incorporating them into business practices, and extending them to the supply base is crucial to the success of supply chain sustainability programs. In addition, gaining buy-in from C-level executives can help get these efforts off the ground and drive their continued prominence within the organization, Minahan notes.

Here are some specific examples of procedures, strategies, and practices companies are embracing to drive supply chain sustainability:

Design for the Environment. Many companies have found that building an environmentally friendly supply chain starts long before their products hit the logistics department. "To truly make a lasting impact, companies realize they have to rethink their processes and factor in sustainability from the front end," says Gonzalez.

Creating products and supply chain operations with sustainability in mind is the goal of Herman Miller's Design for the Environment (DfE) protocol. To develop DfE, Herman Miller teamed up with Charlottesville, Va.-based McDonough Braungart Design Chemistry (MBDC), best known for its innovative "cradle-to-cradle" philosophy of eliminating waste and designing products and services based on patterns found in nature. MBDC conducted a detailed chemical analysis of Herman Miller's products and helped it develop ways to eliminate "nasty" chemicals from its products, says Schramm.

The company's Mirra chair was its first product to be designed entirely under the cradle-to-cradle protocol. It's PVC-free, made of 42-percent recycled content, and designed for easy disassembly–it comes apart in 10 seconds or less.

"Originally, the chair's spine had a metal rod embedded for structural strength, but embedding metal inside plastic doesn't work for disassembly. So we developed a new plastic spine

GREEN SHIPPING GAINS GROUND

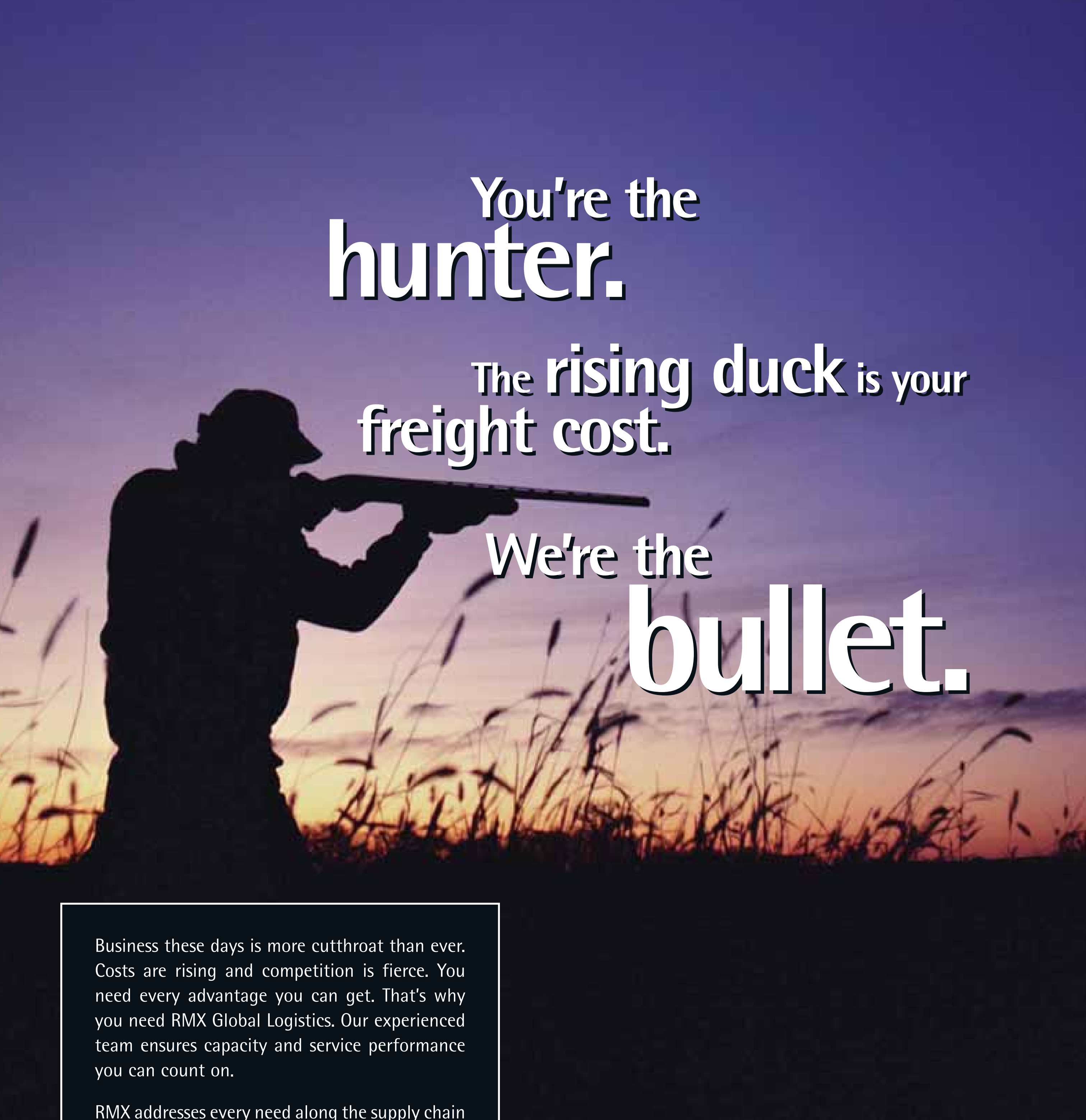
Of all facets of the supply chain, transportation may be the hardest to greenwash. By shipping thousands of packages every day, businesses emit huge amounts of carbon into the atmosphere. But companies built around transporting products from point of origin to destination can't exactly stop shipping goods.

Companies looking to make transportation environmentally friendly have turned their attention to carbon-neutral shipping. A variety of programs aimed at providing ways to offset the carbon emitted through shipping are now available. Seattle-based TransGroup Worldwide Logistics, for example, offers an opt-in program called TransNeutral that enables shippers to green their domestic shipments. The third-party logistics provider uses a weight-based calculation to determine the amount of CO^2 each shipment emits; it then helps offset that CO^2 by contributing to emission reduction programs through the Chicago Climate Exchange. The company also lets shippers monitor those offsets by sending "greening reports" that detail results.

Another option, geared toward online retailers, is ShipGreen. The new company–launched in September 2007–enables Web retailers to allow shoppers to calculate and offset the carbon emissions created by each product shipped. Using a unique algorithm developed by University of California, Berkeley engineers, ShipGreen takes into account the weight of each item as well as the distance and means of travel, helping customers reduce each purchase's carbon footprint.

Retailers install a ShipGreen module on their site and, during checkout, shoppers can see the amount of CO^2 shipping their order creates. Customers can then decide to add to their purchase an investment in their choice of carbon-offset projects such as hydropower, wind farms, and reforestation. Low price-points make this proposition attractive to shoppers: shipping a 50-inch television by truck from Chicago to San Francisco generates 35 pounds of CO^2, and it costs a shopper only 49 cents to invest in carbon offsets to balance out the global warming impact of shipping the TV, according to ShipGreen's algorithm.

With companies facing growing pressure to reduce their impact on the planet, expect carbon-neutral shipping programs to grow and spread. "I look forward to the day when green shipping becomes the standard rather than the exception," says Jason Sperling, co-founder and CEO of ShipGreen.


You're the
hunter.
The rising duck is your
freight cost.
We're the
bullet.

Responsible Packaging. Supply chain professionals have always worried about products contained inside boxes, but they've recently started paying more attention to the boxes themselves. By using sustainable packaging materials and eliminating wasteful elements, many companies are finding that designing environmentally

Herman Miller's Mirra chair sits well with the company's sustainability efforts. Comprised of 42-percent recycled materials, the PVC-free chair's parts can be disassembled in 10 seconds or less.

with better strength that had no metal embedded and could easily come apart," notes Schramm. "It ended up costing less, made for a better product, and is kinder to the environment."

Designing with sustainability in mind also extends to Herman Miller's suppliers and employees. The company's Supplier Quality Plan (SQP) measures its top 80 suppliers on up to seven categories, one of which is the ability to cooperate on DfE initiatives.

"The more points suppliers score on the SQP, the more likely they are to get future business from us, so they are motivated to comply," Schramm explains. Internally, Herman Miller directors are tasked with a variety of DfE projects, which can account for as much as 10 to 20 percent of their performance review. In addition, the company maintains an Environmental Quality Action Team, a cross-disciplinary group of employees that meets every quarter to plan corporate action around environmental affairs, green building, air quality, and other sustainability issues.

friendly packaging also makes good business sense.

Computer giant Hewlett-Packard (HP), well known for its efforts in this arena, developed the Bulk Pack program, detailed in a recent AMR Research report, *The Value of Green – A Case Study of Hewlett-Packard's Social and Environmental Responsibility Strategies in the Supply Chain*.

Targeting package waste reduction, the Bulk Pack effort places multiple units of products in a single large, reclosable carton. The method cuts receiving, inventory, and deployment costs for customers by 73 percent, while also eliminating 75 percent of waste disposal costs. A single pallet of individually packed cartons (servers, in

FULL SERVICE TRANSPORTATION MANAGEMENT

COMPLETE TRANSPORTATION MANAGEMENT • CUSTOMIZED SUPPLY CHAIN SOLUTIONS • GLOBAL MULTIMODAL LOGISTICS

Whether companies opt to overhaul their entire supply chain in the name of sustainability or start with small improvements to reduce their carbon footprints, their efforts are likely to make a positive difference.

this example) comprises 24 units, while the Bulk Pack holds 32 units with better security and item tracking, note Kevin O'Marah and Eric Karofsky, the report's authors.

Leading alcoholic beverage producer Diageo is also a proponent of responsible packaging efforts. To help meet its goal of achieving carbon-neutral status within the next five years, the company uses sustainable and environmentally friendly packaging, says Michael Eaton, procurement director, chateau and estate wine.

"We're always actively looking for less expensive and more sustainable packaging materials such as bottles, labels, caps, corrugated boxes, and point-of-sale materials," he says.

The company also uses a large amount of recycled glass for its bottles, and gains from these efforts not only a bottom-line impact but a touchy-feely one as well. "As a consumer goods company that touches consumer feelings, we push for corporate and environmentally responsible messaging. We don't want people looking at our products negatively," he says.

Network Design. Manufacturers, retailers, and other companies to whom supply chain strategy is a crucial part of business spend a lot of time and effort determining where to locate distribution centers, offices, and manufacturing facilities. Known as network design, this strategic-level analysis takes into consideration where demand comes from, where customers are located, and how to balance transport costs with inventory costs based on that demand.

Today, supply chain professionals are starting to include sustainability in the network design mix, and software vendors such as iLog, i2, and Infor offer solutions that factor in sustainability issues when performing network design analyses.

"Companies that are looking to reduce their carbon footprint may decide, as long as it makes sense from a big-picture perspective, to build a facility in a different location than they might have considered in the past," says ARC's Gonzalez. Bringing in goods from low-cost countries, for example, often reduces costs on the production side, but may ultimately result in prohibitive sustainability expenses.

As Herman Miller's Schramm notes, "We can often save 15 to 20 percent by bringing in materials from China, but once we can accurately measure it, we may find that the carbon footprint offsets will cost more than what we save."

It's unlikely that a company would currently optimize its network solely on carbon footprint, says Gonzalez, but by understanding the environmental vs. cost tradeoffs, companies may reach different decisions and prevent sustainability constraints from being designed directly into their networks.

Distribution Center Overhauls. With their mega sizes and propensity to use energy around the clock, distribution centers can be a primary source of waste in the supply chain. But like other sustainability efforts, warehouse operators find they can achieve both environmental and operational benefits by greening their DCs.

As with TMS solutions, warehouse management systems (WMS)–which many companies already use to improve efficiency–can also play a sustainability role. Using a WMS can help companies maximize the efficiency of conveying and handling processes, increase flow through, achieve higher levels of cross-docking, and even cut down on forklift usage by reducing the number of touches necessary to move product–all of which helps reduce energy consumption.

Companies can also make changes to warehouse buildings and processes–both inside and out–to lessen their environmental impact. Examples include implementing energy-saving motion sensors for lights; installing solar panels to power all or part of DC operations; using hydrogen fuel cell-powered forklifts; switching to reusable pallets; and implementing RFID, voice-based technologies, and other electronic interfaces that help reduce paper consumption and waste.

GREEN REWARDS

In the end, whether companies opt to overhaul their entire supply chain in the name of sustainability or start with small improvements to reduce their carbon footprints, their efforts are likely to make a positive difference. The good news is that the inherent moral benefits of sustaining the planet and protecting the earth's resources are not at complete odds with building a better supply chain and sustaining a profitable business. Whether driven by a major customer such as Wal-Mart, impending government regulations, consumer input, or a desire to reduce fuel costs, companies aiming to improve supply chain sustainability are likely to be rewarded in the end.


ILLUSTRATION: MARY BRENNAN

EAST MEETS WEST

BY LISA HARRINGTON

Make a good impression on potential business partners in China by orienting yourself to some key cultural differences.

Because of the significant differences between Chinese and Western business cultures, companies planning to launch China-based endeavors must understand the etiquette rules and customs.

Achieving success with Chinese business partners means carefully cultivating a relationship of trust. If you blow it on your first attempt, you probably won't get another shot. Overall, the Chinese aren't fond of giving second chances.

"There's a right and a wrong approach to establishing a business relationship in China," says Sean Wall, deputy managing director at DHL-Sinotrans, a Chinese express-shipping provider.

"If you're opening a footwear or textile business and at the first meeting tell the Chinese manufacturer how the industry works, and say 'This is how we'll do business'–that's the wrong approach.

"If you ask direct questions about a business–such as how much money it made in the past–that is the wrong approach," Wall continues. "If you expect business decisions to be made quickly at one meeting–that is the wrong approach. Chinese do not discuss or make actual decisions in a business setting."

You may find your usual methods of gathering information ineffective.

"Don't expect an answer to direct questions," Wall says. "And if you ask too many direct questions, Chinese simply won't do business with you."

Your conduct with hosts when out of the office together means even more than your behavior in business meetings.

"In the United States, you never do business with friends. In Asia, you only do business with friends," observes Sean Hurley, Asia Pacific human resources director at Agility Logistics, a provider of integrated supply chain solutions. "Before Chinese will do business with you, they want to spend time getting to know you personally. That usually means dinner with a lot of alcohol."

KNOW YOUR AUDIENCE

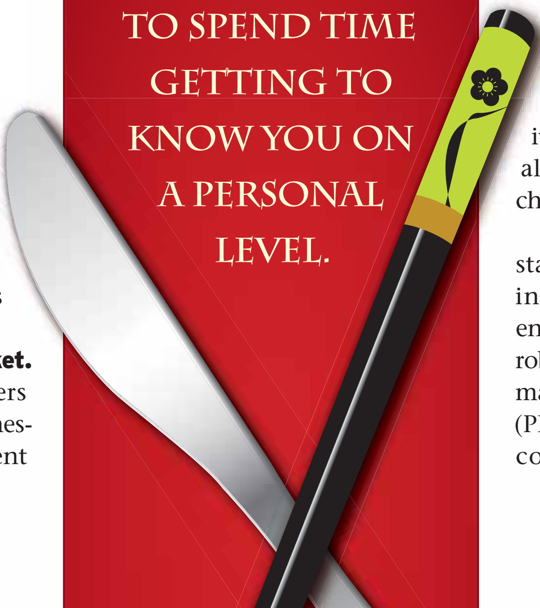
As in business everywhere, it's essential to understand the background and concerns of your contacts. Demonstrate your interest in founding a relationship with your potential partners by showing a firm grasp of the following issues facing Chinese businesses.

New focus on the domestic market. Historically, Chinese manufacturers focused on exports because the domestic market wasn't as strong, payment terms were unstable, and China lacked a credit system. Changes are occurring, however, because of the rapidly growing domestic market.

"So many products still don't exist here," observes Anna Cohen, president of Streamline Alliance, a U.S. trading company that specializes in China procurement services. "This presents an opportunity for companies to find new niches and make products with higher margins."

Unfortunately, companies don't always alert overseas clients that they plan to shift production to the domestic market. "We have to monitor what's happening in both the short and long term," says Cohen. "Thirty people in our Shanghai office frequently travel to Chinese factories to see how they're changing."

IN ASIA, YOU ONLY DO BUSINESS WITH FRIENDS. BEFORE THE CHINESE WILL DO BUSINESS WITH YOU, THEY'LL WANT TO SPEND TIME GETTING TO KNOW YOU ON A PERSONAL LEVEL.



Westward expansion. In addition to focusing on growing its domestic market, the Chinese government wants to push factory development westward, where space is plentiful and labor is cheaper. To encourage this movement, the government is offering financial assistance – favorable loans, payments, and tax breaks – to manufacturers.

"If you move inland," observes Cohen, "many development zones offer good land deals and tax breaks."

These favorable conditions raise a number of issues for U.S. and European companies sourcing in eastern China. When will the plant move and how long will it take? Will the company be able to find qualified employees? What about logistics? The transport infrastructure in many western areas cannot support large containers, so how will goods move? One major U.S. high-tech company built a factory in one of the new western development zones only to discover that the regional airport's runways were too short to handle the aircraft the plant required to service its outbound shipping volume.

"If U.S. companies don't know what's happening at their Chinese suppliers, they can't prepare for such changes and could be unpleasantly surprised," says Cohen. "Can the factory guarantee the same product quality after the move? If supplies aren't located nearby, it may take longer to source materials. How will this affect your supply chain?"

Quality troubles. Enforcing quality standards presents a huge challenge in China. "Right now, government enforcement mechanisms are far from robust," says Dwight Nordstrom, chairman of Pacific Resources International (PRI), a manufacturing holding and consulting company. "You can't

assume a Chinese company will adhere to your quality standards over time."

Rising labor costs in and around major Chinese cities further complicate the situation. Product specifications begin bumping up against these costs, and a Chinese factory may switch to less-expensive materials, which might negatively affect product quality, without notifying the sourcing company.

"People can't be on-site 24 hours a day watching everything that goes on," says Mark Welles, vice president Asia/Pacific for TradeCard, a Web-based trade platform that synchronizes financial transactions with physical supply chain events. "So you need to establish processes for random, frequent sampling and stay on top of quality."

Additionally, be explicit in your specifications and requirements for both products and services. One European dog-toy company that sources from China "sends explicit production specifications about the kinds of substances that the products can't include," Cohen says. "Americans tend not to be as clear about their specifications."

Some U.S. companies make the mistake of testing the first sample that comes off the production line, then trusting that the factory will continue to produce to that level of quality. Cohen recommends sending products to an independent lab for testing and inspection.

The talent shortage. In China, companies struggle to find talent, especially in the supply chain segment. Of the 1.3 billion people in China, 80 percent work as farmers. China currently employs about 5,000 managers, but will need 80,000 in five years, according to a recent McKinsey study. Meeting this demand is among the biggest challenges the country faces today.

"Finding Chinese people who can develop into leaders is tough," says Agility's Hurley. "Americans and Europeans are used to taking initiative and getting the job done. Chinese society is patriarchal and organizations operate top-down. Workers tend to wait until they are told to do something – and only then do they do it. If they do something wrong, they lose face. So it's better to do nothing than do something wrong."

Given this cultural attitude, companies must adopt a more structured approach to management than what exists in the United States or Europe. Chinese employees expect clear, detailed instructions and a greater level

MIND YOUR MANNERS

Knowing what to expect when you meet with your Chinese contacts can help you make the best possible impression on them. Here's some advice.

- When attending business and social meetings, arriving early indicates respect for the host. Although Chinese are not always on time, punctuality is viewed as a positive asset in others.
- At dinner, wait for your host to tell you where to sit.
- Use chopsticks, but never stick them upright in your rice bowl. This is a sign of death.
- Chinese pride themselves on holding their feelings inside. They may not smile at a first greeting or as often as people do in other Asian countries. In Western culture, it's appropriate in a first meeting to engage in informal dialogue that includes humor. In Asian culture, however, humor can be seen as inappropriate. Talking about family is looked upon favorably because Chinese culture is family oriented.
- Learning to say a few words in Chinese will go a long way toward beginning a good relationship. It's also wise to hire a translator.
- In China, the family name precedes the given name, which is occasionally followed by the second name or the Western equivalent of a first name. For example, Huang Hua is called Mr. Huang, and Hua is his given name. However, some Chinese will switch the order of their names when they are dealing with foreigners. Further, many Chinese adopt Western given names.
- Chinese have a high regard for rank and seniority, and are impressed by and more attentive to senior representatives of foreign firms. Ranking your company, especially if it's the biggest or the oldest of its type, can help to impress Chinese representatives.

of supervision and direction.

"Many Chinese workers are first-generation capitalists," Nordstrom says. "They didn't have parents who were managers or owners of profit-making businesses. You have to teach them how to do business."

Regulatory flux. Unlike Western societies, business law is a recent phenomenon in China. "In the 1980s, the total number of laws published in China filled a book less than one-inch thick," says Nordstrom. "Today, books of Chinese law can fill a room.

"Because many of the laws are new, knowledge and enforcement are sketchy," Nordstrom says. "The big difference from five years ago is that government relationship workers have to be aware of all the new regulations and understand the new class of bureaucrat whose job is to enforce these regulations. In the past, regulations were always negotiable."

Because of this regulatory flux, any foreign company doing business in China should consider retaining a government-relations manager.

While legislation and regulation affecting supply chain activities is promulgated in Beijing, China's 33 provinces interpret these laws to suit local conditions. For example, Beijing law requires Customs to release shipments within 12 hours if electronic data is presented correctly. Because of a major smuggling problem in southern China, local officials may require 100-percent shipment inspections, delaying clearance longer than 12 hours.

BEING AWARE OF PREVAILING ATTITUDES, CUSTOMS, AND BUSINESS APPROACHES COULD HELP YOU AVOID MAKING AN EMBARRASSING, OR EVEN DEAL-BREAKING, MISTAKE.

WORDS FROM THE WISE

Knowing potential Chinese partners takes more than just understanding the issues they're currently facing. You also need to familiarize yourself with their prevailing attitudes, customs, and business approaches–not to mention some basic cultural differences. Being aware of the following differences could help you avoid embarrassing, or even deal-breaking mistakes.

Negotiations. Don't get caught up in or bogged down by lengthy negotiations in China, because everything is a negotiation–down to buying admission tickets to a museum. Chinese are renowned for being tough negotiators.

Their primary aim in negotiations is to secure "concessions." Always bear this in mind when formulating your own strategy. Be willing to compromise and ensure that their negotiators feel they've gained major concessions.

If business negotiations turn sour, however, be prepared to walk away. "Once you get deal fever, and the other side gets wind of it, you've lost your leverage," says Welles. "Your board of directors has to be clear that a negotiation in China could last 14 months and not produce a deal. But no deal is better than a bad deal."

Don't expect quick decisions, and be absolutely sure of your facts. "Chinese people do their homework thoroughly when they prepare for a meeting," Wall says. "Westerners might have a gut feeling after establishing 90 percent of the negotiation figures, but the Chinese must have 100 percent of the numbers."

"Play it loose," Wall adds. "You may think you made little progress at a

meeting. But at dinner, the Chinese businessman sitting next to you might say, 'We'll probably sign the contract with you tomorrow.' This style is tough for Westerners to get used to."

Contracts. "The business contract in China is a document that explains the deal at the point of signing," says Welles. "That paper won't necessarily protect you or prevent a quality issue from occurring. The contract creates the rules of the road that guide a relationship once you get one started."

Streamline Alliance has a Chinese subsidiary and signs contracts in Chinese using local law. "These agreements are easier to enforce," Cohen says. "An American contract written in English is impossible to enforce in China."

When DHL writes a contract between American and Chinese companies, it develops a hybrid agreement because "there's no one law system that can be used. Our lawyers have to go through the terms word by word with the Chinese partner to make sure everyone understands conditions they're agreeing to," says Charles Brewer, executive vice president-sales, DHL Express U.S.

Face. The perception of a person's character or prestige, known as "face," plays an essential role in the Chinese national psyche. Chinese feel acutely sensitive to gaining and maintaining face in all aspects of social and business life. They consider face a prized commodity that can be given, lost, taken away, or earned. Causing someone to lose face could ruin business prospects.

Westerners can unintentionally offend Chinese by teasing them good-naturedly. But just as face can be lost, it can also be given, such as by praising someone for good work in front of their colleagues. Giving face earns respect and loyalty, but praise should be used sparingly. Over-use suggests insincerity on the giver's part.

FACE-TO-FACE ADVICE

Jean Haner explains the art of Chinese face reading in her upcoming book "The Wisdom of Your Face" (www.wisdomofyourface.com). She shares her insights with *Inbound Logistics*.

Q. How can Americans make a good first impression on a potential Chinese partner?

A. Shake hands and behave more formally on your first meeting than you would in the United States. Americans tend to mix their images of all Asian cultures and think that because bowing is so important in Japan, it's true in China as well. It's not. A brief nod of the head along with a good handshake is important, but don't overdo the bowing–it pegs you as ignorant right away.

Q. What specific expressions or gestures should Americans avoid making?

A. Don't gesture widely, speak too loudly, or try to joke too much in the beginning of your relationship. Certainly warmth and good humor is appreciated, but keep it smaller than you might normally. Even if your Chinese colleagues or clients speak loudly or gesture in an exaggerated fashion, you can't do the same in the beginning. They'll interpret your behavior differently than their own.

Chinese sometimes call Westerners 'Big Noses.' Overall, they view Americans as loud and overly casual, like big dogs that bound into a room and knock things over. Refrain from any behavior that reinforces that belief. Don't slap someone on the back on first meeting; don't hug them; don't be overly familiar in any way. Behave more formally than you would in the United States. Keep a friendly expression on your face, but big grins are not helpful.

Q. What are the rules for conversing with the opposite gender?

A. As with any international business relationship, be respectful and pay extra attention to avoiding any behavior that could be misunderstood. Business is still a male world in China, so American businesswomen may make Chinese men uncomfortable; it's an extra hurdle they have to overcome.

Q. Do any expressions or gestures mean something different in China than they do in America?

A. Actually, it's a sound you should avoid making. It's common in the West, when you share a meal with someone, to make an 'Mmmm!' sound, to demonstrate the food is delicious and you're enjoying yourself. However, that sound in all dialects of Chinese means 'no!' and can signify displeasure. So it may startle and confuse your Chinese hosts if you look up from your plate and make this sound with a big smile on your face.

Q. What are the rules about making eye contact?

A. It's considered impolite to stare straight into someone's eyes during an entire conversation. In the West, we consider that a sign of someone's honesty. In China, however, it feels aggressive. But making occasional eye contact is also important, just to make sure you're being understood and maintaining the connection.

Chinese don't like to say "no" or be the bearers of negative news. Instead, they may hint at their answer indirectly in a conversation. Similarly, you may hear a "yes" response to almost every statement. Be careful of this empty "yes," as it may not always draw positive conclusions.

Verify what has been said to you to make sure you got the right message. It's important that all parties maintain face. If you think the answer to a question or proposal is really "no," verify your feeling by asking questions that can be answered positively.

Body language. Be conscious of body language and movement when doing business in China. Be as calm, collected, and controlled as possible. Keep your body posture formal and attentive, as this shows you have self-control and are worthy of respect.

Chinese usually greet one another with a slight bow or nod of the head. In business and with foreigners, they usually exchange a handshake upon greeting and departure.

They don't particularly like physical contact, especially when doing business. The only exception is when a host is guiding a guest. Even then, they will only make contact by holding a cuff or sleeve.

Business cards. When giving someone your business card, use both hands, careful that the writing faces toward the person you're giving it to, and say, "I'm pleased to meet you." The other person will bow slightly.

Likewise, when receiving a business card, accept it with both hands, make a small bow to the person, and say, "Thank you." Make a show of reading the card. Don't place it in your pocket or purse immediately, as this is considered rude. If seated at a conference table, place the business cards you're given in front of you on the table. This shows respect to all present.

If you have time before your trip, get your business cards printed in English on one side and Cantonese or Mandarin on the other.

RESPECT GOES A LONG WAY

The many intricacies of doing business in China can seem overwhelming. But doing your homework, focusing on building relationships, and finding a trusted partner to be your representative on the ground can help you overcome the hurdles.

"Chinese are incredibly gracious," Nordstrom says, "and Americans are highly respected and appreciated. Anything you can do to show respect to them as a person, a family, a city, or a country goes a long way."

ACT GLOBAL, WORK LOCAL

Even major corporations can run into problems when they go into China without doing their homework. "You can cut costs by producing goods in China, that's true," says St. Claire Gerald, supply chain management consultant and former director of supply chain management, Footlocker Inc. "But you also have to manage suppliers located thousands of miles away, move raw materials into factories, and deliver finished goods back to your warehouses or customers."

Companies run into trouble when they skimp on due diligence. Toy company Mattel is a prime example. "For years, Mattel has been bringing in millions of dollars of product from China," says Gerald. "It issued specifications for the factory that the toys must be painted, but that the paint must not chip. At the same time, it said the paint could not contain lead.

"The Chinese companies followed Mattel's instructions," Gerald points out, "but to meet the no-chipping spec, they used a binding agent, which did contain lead. They followed the specifications but added the extra step to meet Mattel's specs." This miscommunication forced the toymaker to issue a major recall in 2007, right before the Christmas selling season.

To avoid mistakes such as this one, find local expertise—hire a third party who has contacts in your industry, knows well-connected people, and understands how the system works. "If you want to produce apparel or computer chips, set up relationships with a partner who knows those industries and the people in them intimately," Gerald says. "That's my best advice: Find a partner who has local expertise, whom you can trust to act in your best interest."

"Spend face time with Chinese companies," Gerald adds. "Webcasts and podcasts are no substitute for face-to-face meetings. Face-to-face meetings pay dividends down the road in managing your suppliers.

"When issues arise, you have to be able to call on that relationship," he continues. "You need that foundation to work through problems. The road to success means establishing good personal relationships and working with a reputable partner who will support you."

Transportation infrastructure lies at the heart of Mexico's ambitious plans for the future.

Mexico PAVES THE ROAD TO PROSPERITY

By Lisa Terry

"Nowadays, competitiveness, economic growth, and countries' opportunities for well-being depend largely on the solidity and modernity of their infrastructure," said Mexico President Felipe Calderón on July 18, 2007, the day he announced a five-year, $37-billion public-private funding package to upgrade his country's highways, railways, ports, and airports.

Calderón cited a study showing that every percentage point of Gross Domestic Product (GDP) invested in infrastructure generates additional economic growth of 0.3 percent.

But while Mexico's transportation infrastructure has made great strides to date, obstacles still await. Logistics in Mexico currently costs up to 20 percent more than in the United States, according to consulting firm InfoAmericas. A panoply of factors contribute to these high costs, including poor road conditions, inadequate rail infrastructure, a disconnect between transportation modes, and the resulting need to carry more safety stock.

Still, conditions have been good enough to attract many U.S. manufacturers and shippers who are tapping Mexico's resources as a production center, market, and logistics conduit to the rest of North America. While Mexico's transportation infrastructure considerably lags behind the United States', in that gap lies opportunity. Unlike the United States, which must overcome legacy infrastructure that was only partly designed to handle an influx of international goods or a high volume of north-south freight movement, Mexico has the opportunity to create a well-coordinated, multi-modal infrastructure to efficiently move shipments within its borders, and out for export.

Boom Times

Mexico and U.S. manufacturers doing business there have much good news to boast about. Mexico ranks as the world's 12th-largest economy by GDP, on par with countries such as Canada and Spain. Per-capita income continues to rise, creating a growing middle class.

Approximately 90 percent of Mexico's imports and exports are covered by trade agreements with more than 40 countries. The most significant agreement, NAFTA, helped triple intra-regional trade between the United States, Mexico, and Canada from 1994 to 2004.

Growing cross-border trade volume continues to drive many transportation improvements. The northern part of the country, for example, has seen a marked increase in the quality of its roads.

While NAFTA limits the ability of foreign companies to operate trucks in Mexico beyond a 25-mile zone on either side of the U.S.-Mexico border, U.S. third-party logistics providers (3PLs) freely operate logistics facilities and offer services there.

Partnership agreements among U.S. and Mexico carriers have spurred an ever-expanding array of consolidation and transfer facilities on both sides of the border, replete with 3PLs, brokers, forwarders, and drayage services managing Customs clearance and hand-off processes.

"Mexico's steady march toward integration with the U.S. economy has been glued together by fairly sophisticated cross-border logistics, which manages to move goods at about four to five percent of the cost of goods sold," according to InfoAmericas' September 2007 *Latin American Market Report*.

"Large-scale manufacturers on the Mexico side of the U.S. border utilize state-of-the-art logistics processes and technology to connect their factories with global suppliers and U.S. customers," the report notes.

Myriad government programs smooth border crossings. The well-established maquiladora factory system enables material and equipment to be imported to Mexico duty- and tariff-free for assembly or manufacturing, then re-exported back to the originating country. Currently, the garment and electronics industries make heavy use of this system. Under NAFTA, some of these goods can now enter the Mexican market. Mexico's government has also extended tax breaks to the maquiladoras to incent them to stay put.

Pre-submission of electronic manifests, and programs such as the Customs-Trade Partnership Against Terrorism (C-TPAT) and Free and Secure Trade (FAST), expedite Customs clearance and eliminate time-consuming cargo inspections at the border.

New initiatives include the Federal

Despite challenges within the country's transportation infrastructure, Mexico continues to attract U.S. businesses seeking warehouse locations.

Motor Carriers Safety Association's controversial pilot program, which allows up to 100 carriers from Mexico and the United States to receive cross-border privileges for one year.

The North American Facilitation of Transportation, Trade, Reduced Congestion, and Security (NAFTRACS) initiative is a three-phase pilot project introduced by NASCO to develop and deploy cargo tracking and management technologies for freight transported through the I-35/29/80/94 trade corridor.

Free-trade zones (Recinto Fiscalizado Estrategico) are also emerging with greater frequency, providing unique warehousing facilities where cargo enters and exits by going through Customs. Merchandise leaves these facilities sealed in trailers that won't be opened again until they reach their U.S. destination, bypassing inspection at the border.

"Mexico is using inland ports as experimental places to test these new Customs handling procedures," says Frank Conde, director of special projects and communications at NASCO.

Tapón Corona Tips its Cap to Quality Infrastructure and Service

Tapón Corona makes high-quality bottle caps with a unique 27-ridge design that enables them to twist off easily, yet securely seal in their contents. But that's only one reason the Mexico City-based company earned Anheuser-Busch's certified supplier designation and tops favored-supplier lists at five of the company's breweries.

The ability to consistently deliver those caps to breweries across the United States within tight 10-minute delivery time windows also contributes to Tapón Corona's solid standing with the brewer, as well as bottling customers including the Mexican arms of Coca-Cola, PepsiCo, and Latin brands.

Tapón Corona relies on CFI (recently purchased by Con-way Freight) as a major carrier and logistics advisor, helping the company meet those challenging delivery constraints as well as maintain a rigorous just-in-time production schedule, says Enrique Fernandez, Tapón Corona's chairman of the board. CFI's flexibility has been key to making sure product arrives on time, he says.

Tapón Corona's supply chain includes steel and aluminum sourced from a Japanese supplier that offers consistent high quality, delivered via ocean carrier to an inbound warehouse at Mexico's Manzanillo port. The raw material stays at the port until it's needed during the six-day/24-hour production process. It's transported over the road to Mexico City in one day, with Customs duties imposed only when material is drawn, a boon to cash flow. Other supplies are sourced largely within Mexico.

Outbound goods travel over the road, 80 percent of them to the United States. Tapón Corona's PASC Mexican and C-TPAT U.S. certifications, combined with CFI's, ensure fast border crossings for trailers, each of which contains 10 million pre-printed bottle caps. The manufacturer maintains two U.S. warehouses to accommodate spikes in customer orders.

While the current infrastructure works for Tapón Corona, there's always room for improvement, and planned upgrades will open up new opportunities. "The upgrades will help us export more product from Mexico," Fernandez says. "We want to expand business with existing customers as well as microbreweries."

Mexico's domestic infrastructure has received less attention than methods for bringing shipments over the border. The country's infrastructure ranked below chief rival China and nearby Latin economies including El Salvador and Barbados in a recent World Economic Forum report.

A wide disparity exists among modes, however. Logistics managers in Mexico rate the quality of toll highways eight out of 10, and airports and seaports 7.9, compared with 6.2 for toll-free highways and 6.5 for rail, according to InfoAmericas.

In contrast to cross-border transport, "Mexico's domestic logistics industry is less efficient and the full cost of transportation and logistics probably reaches closer to 15 to 18 percent of the purely domestic market GDP," notes the InfoAmericas report.

"Currently, it's hellish to get from point to point in the country," acknowledges Conde. "Businesses can't rely on consistent delivery times, so they build ridiculous redundancies into their inventory and transportation operations."

Attaining Mexico's ambitious improvement plans will require overcoming some significant obstacles.

While a national commitment to infrastructure improvement exists, some individual states show a lack of consistency. "They're often not on the same page," says Scott Satterlee, vice president of transportation for C.H. Robinson Worldwide, a 3PL based in Eden Prairie, Minn. "That's one hurdle they'll have to fight through."

Mexico a la Mode

Highways. Eighty percent of Mexico's domestic transport and 70 percent of international transport moves over the road. Toll-free highways are often of poor quality, and only 25 percent of Mexico's roads are paved.


Excellence
in Supply Chain
Solutions
We offer the most varied services associated to warehousing operations, including:
• Inventory management
• Picking and fulfillment of orders
• Temporary storage
• Packaging
• Inbound warehouse
• Design a logistic network adapted exactly to our customer requirements
• Reverse logistics
Z
Zimag Logistics
Km. 27.5 Carretera Lago de Guadalupe s/n
Col. San Pedro Barrientos
Tlalnepantla, Edo. de México, C.P. 54010
Tel. 52 (55)1940 1900 - 1940 1918
www.zimag.com.mx

Room for Improvement

With many logistics assets spread over a wide geographic area, Mexico holds the promise of upside potential for transportation infrastructure. Mexico President Calderón's five-year infrastructure improvement initiative earmarks $37 billion in public-private funds to improve port networks and road/rail interconnectivity.

TOP PORTS BY VOLUME

		% OF MEXICO TOTAL
1	Port of Manzanillo	40%
2	Port of Veracruz	29%
3	Ports of Altamira & Tampico	16%
4	Port of Lázaro Cárdenas	6%

To upgrade, the Mexican government has been privatizing; since 1989 it has built more than 2,400 miles of four-lane highway through concessions to private sector contractors. Major toll roads stretch from Guadalajara to Zaplotanejo, Maravatio to Zapotlanejo, and Leon to Lagos de Moreno and Aguascalientes.

"State-of-the-art and world-class highways tend to be private, with high tolls," says Gene Sevilla-Sacasa, vice president and managing director for Ryder Latin America.

Road congestion also can be an issue. Travel time from Mexico City to Loredo, for example, takes longer than a similar distance in the United States, according to Satterlee.

Paying the Tolls

Problems arise even on some toll roads, such as the Autopista del Sol, a 163-mile span connecting Cuernavaca with Acapulco. The road was allegedly constructed from poor-quality materials to minimize costs for the operators, who were awarded only a 10-year concession. The government has had to bail out several private operators, then re-privatize.

"Some issues have arisen in the last few years," agrees Edward Habe, regional sales director for Averitt Express, a freight transportation and supply chain management services company operating in Mexico. "Even some toll roads aren't being maintained, causing accidents and delays."

Locals warn carriers to limit their speed on some stretches. Poor road quality also means carriers must replace trucks more frequently.

New toll road deals cover longer terms, which could encourage better quality. In August 2007, for example, ICA, Mexico's largest construction company, won the right to run four existing toll roads in central Mexico with its $4.1-billion offer in a 30-year concession.

Mexico plans to construct 10,900 miles of new roads, one-fourth of them in rural areas. Of the country's $37-billion infrastructure improvement package announced in July, $26 billion is allocated for roads, with half the additional funding coming from private sources. The government expects to complete 100 road projects, including major highways linking the Pacific and Gulf coasts, over the next six years.

Rail. Currently, rail carries 15 percent of both domestic and international freight traffic, but the potential exists for much more.

"Rail has been privatized, but still faces major investment issues," explains Guillaume Corpart Muller, regional director, Mexico, Central America and the Caribbean, for InfoAmericas. "One, the legal infrastructure behind rail makes investors wary. And Mexico's rail leadership has not demonstrated they can make the system work effectively and efficiently."

In addition, different rail systems lack interconnects, forcing railcars to be unloaded, then reloaded. These delays mean it can take six to 10 days for a shipment to move from Asia to Mexico. "For plants operating on a just-in-time system, that's not fast enough," Corpart Muller says.

"In most cases, rail is effective when transit time and inventory carrying costs are less than the costs of carrying extra inventory at the plants," says Joseph Gallick, senior vice president of sales for Penske Logistics, which serves as the lead logistics coordinator in Mexico for General Motors and other companies.

When rail systems are eventually interconnected, "companies will be able to reduce supply chain costs and cut inventory because the network will become more reliable and consistent," adds Alejandro Marines, Director General-Mexico for Penske Logistics.

Mexico officials acknowledge that rail plays a key role in the success of the country's seaports. Rail carriers such as FerroMex and Kansas City Southern de Mexico have upgraded services over the past few years, although they need additional revamping to handle increasing cargo volumes. President Calderón's funding package allocates $4.6 billion to rail.

"The greatest potential for domestic transportation in the short term lies in improving rail," Corpart Muller says.

Air. Shippers in Mexico consider air cargo cost-prohibitive, except for high-value goods such as electronics and pharmaceuticals. Even in those industries, many shipments fly by exception, in emergency situations only. Most airports have been privatized, and airport infrastructure investment plans addressed another important Mexican industry–leisure travel, although some of the 33 airports that received cash subsidies are located in industrial areas.

Gene Sevilla-Sacasa, vice president and managing director for Ryder Latin America, has seen shippers choose Manzanillo as an alternative to California's congested ports.

Seaports. Seaports play an essential role in Mexico's international trade. Ports in Veracruz, Manzanillo, and Lazaro Cardenas lead the pack, having made significant investments in cargo handling and intermodal infrastructure. Lazaro Cardenas, for example, will soon be equipped to handle super-sized Chinese containerships.

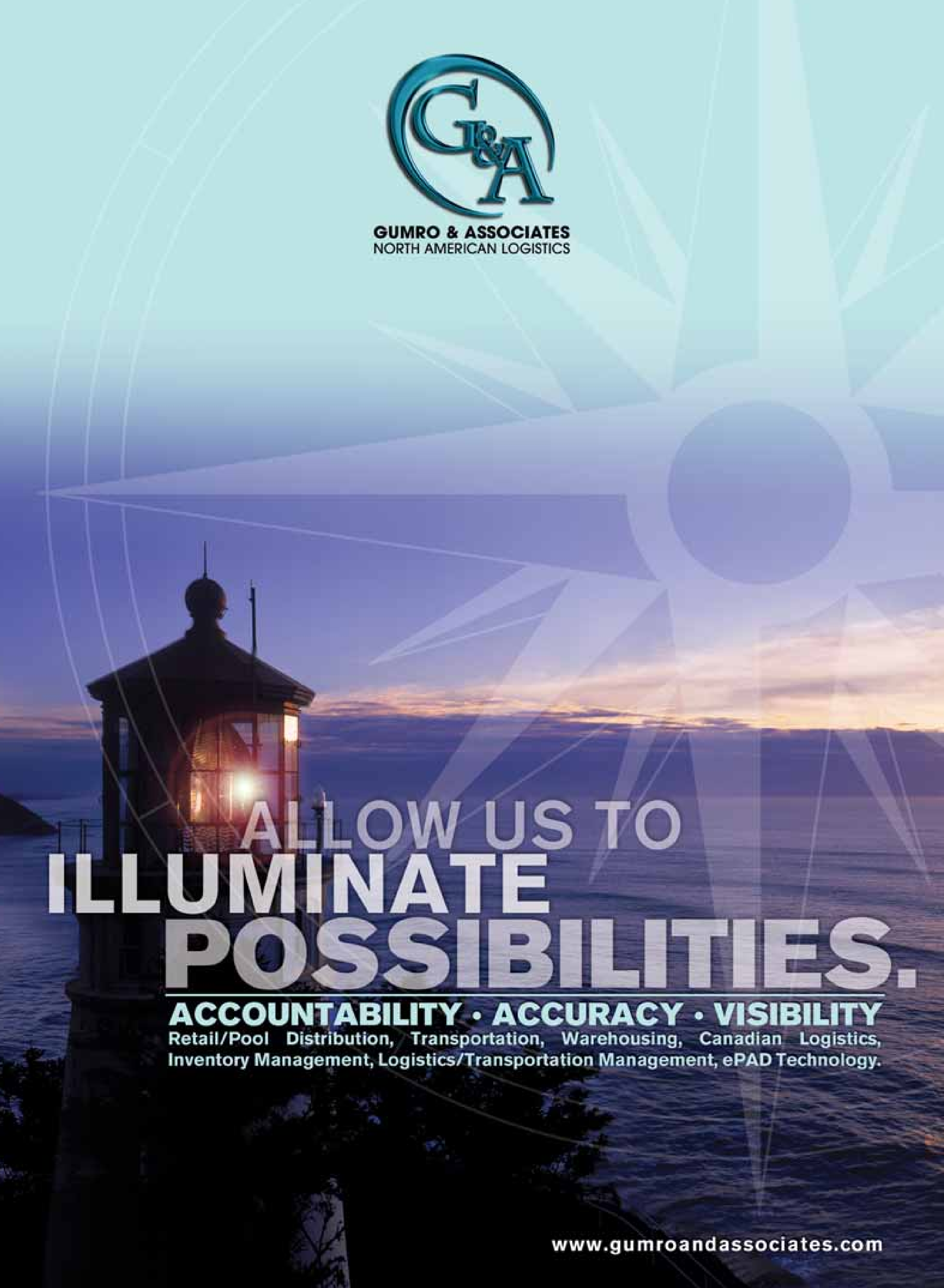
Mexico's Pacific ports increasingly serve as an alternative to congested U.S. West Coast ports. Shippers report unloading times of as quick as eight hours, compared to the several days it can take in California. Mexico ports have considerably lower labor rates–25-percent less than those in the United States–and better labor stability.

"Some companies currently using the Port of Long Beach are now receiving shipments at Manzanillo or other Mexico ports, and trucking them to the eastern seaboard," says Sevilla-Sacasa.

While Mexico's Pacific ports garner most of the attention as an option for bypassing the congested U.S. West Coast, its Gulf ports are starting to attract some interest. Averitt, for example, recently built a new facility in Panama City, Fla., to coordinate services with Linea Peninsular, which specializes in moving cargo between under-utilized Yucatan Peninsula ports and the United States. The agreement helps Averitt avoid busier U.S./Mexico crossings. Other 3PLs may soon follow suit, especially if infrastructure investment continues.

Market Know-How

Mexico's rise continues to attract considerable interest from U.S. manufacturers.


G&A
GUMRO & ASSOCIATES
NORTH AMERICAN LOGISTICS
ALLOW US TO
ILLUMINATE
POSSIBILITIES.
ACCOUNTABILITY • ACCURACY • VISIBILITY
Retail/Pool Distribution, Transportation, Warehousing, Canadian Logistics, Inventory Management, Logistics/Transportation Management, ePAD Technology.
www.gumroandassociates.com

"Large U.S. companies are heavily invested in Mexico," says Sevilla-Sacasa. Smaller companies and market newcomers depend on 3PLs to manage freight and inventory in Mexico on their behalf, while larger companies outsource network planning and some product handling to drive down costs.

New entrants to Mexico manufacturing tend to source from other locations. "They may experiment with ocean and rail from the United States or Canada, so transportation can be costly at the outset," explains Penske's Gallick. While some companies begin building up local sources and driving down costs, others are content to outsource completely.

Consider Trumbull, Conn.-based Pilot Pens, which manufactures and markets quality writing instruments. In 2000, the company formed a subsidiary to buy, then resell, its pens in Mexico. Because it did not want to invest in infrastructure in the country, it turned to Ryder. The 3PL transports goods from Pilot's Florida manufacturing facilities to a Ryder-leased distribution center in Guadalajara, then out to its retail customers. Ryder also handles order processing, customer service, inventory storage and management, motor carrier selection and billing, and shipment tracking.

Mexico's upper echelon carriers are on par with the United States. But with the country's highly fragmented carrier market, it could take five different carriers to cover one long route, and every handoff introduces the potential for security risks and transit time delays. In addition, Mexico's informal, cash-only trucking industry retains a strong presence in the market.

"Service quality and price vary tremendously among Mexico's carriers," says Pete Montano, executive vice president of sales for LTL carrier CFI, which partners with 80 Mexican carriers. Carriers specialize in certain areas; smart shippers tap this expertise to ensure the best service in each region.

"Concerns over risk, theft, and product ownership are more complicated in Mexico than in the United States," notes C.H. Robinson's Satterlee.

Often it's only after an incident that shippers learn some Mexico carriers don't provide the same levels of insurance as in the United States due to high premiums. Shippers need to ensure their Mexico carriers provide the required coverage or consider purchasing third-party policies where applicable.

To help shippers further navigate Mexico trucking, most 3PLs offer the ability to thoroughly vet, then monitor, carrier performance.

"We visit with our Mexican carriers every 30 days and create a report card," says Montano. The carriers that do business with CFI must submit twice-daily updates, usually electronic, to the carrier's tracking system.

Averitt's strategically located its Pharr/McAllen, Texas, facility less than one mile from the Pharr Reynosa International Bridge between the United States and Mexico.

What's the Difference?

U.S. shippers doing business in Mexico need to understand the similarities and differences between the two countries' transportation operations.

Mexico Carriers: Due to truckload and less-than-truckload (LTL) ownership limitations, U.S. shippers and 3PLs face the challenge of finding Mexican carriers with business processes, technology, safety, equipment, and service quality equivalent to carriers in the United States.

Reputable brokers, forwarders, and drayage companies also play an essential role in ensuring safe, efficient freight management. Transportation services companies with bilingual personnel and an understanding of the culture are also critical to the successful movement of goods.

Asset Imbalances: The growing use of Mexican ports rather than U.S. facilities for goods inbound to Mexico's domestic markets and plants, and the increasing quality of Mexico's raw materials, has reduced the need for import from the United States into Mexico. That means imbalances can occur in the availability of trailer assets.

"Typically, we don't see imbalances until after the winter holidays," says Averitt's Habe, although an unusual blip caused an October 2007 imbalance. "Shippers and carriers have to stay on top of asset imbalances."

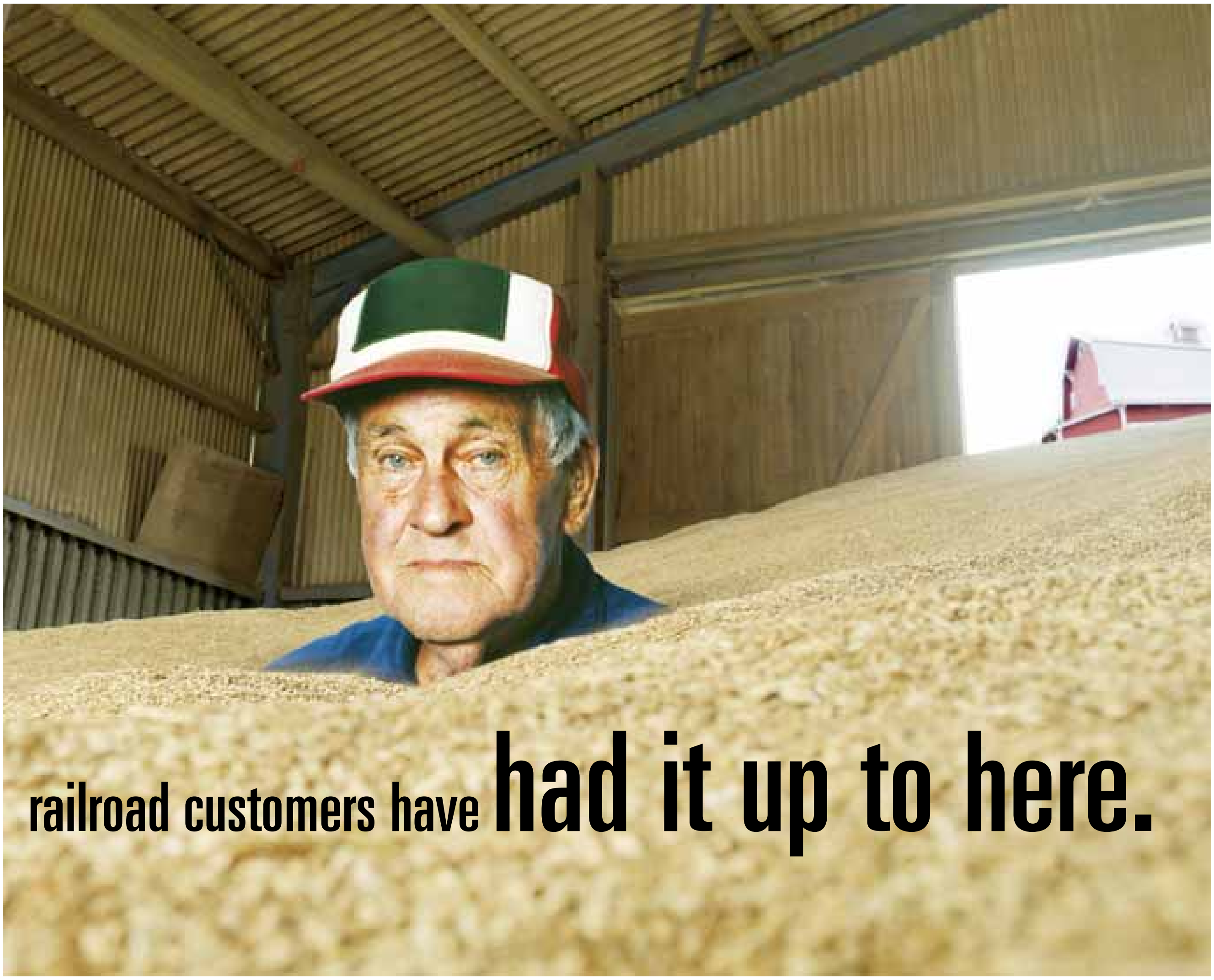
Many Mexican carriers rely on their U.S. partners for trailer assets. But finding Mexico carriers with their own assets, and those willing to haul empty, can help avoid shortages.

Safety: Just as in some parts of the United States, cargo security is an issue on specific routes in Mexico. To keep their cargo as secure as possible, businesses are employing strategies including well-maintained fleets, security agents, truck seals, delivery protocols, convoys, and global positioning systems in areas where additional steps are warranted. Smart shippers use carriers that specialize in a region in order to capture inside knowledge about that area.

"CFI's Mexican carrier partners must take responsibility for the trailer and the customer's goods," says Montano. "Every day, we verify that carriers are keeping track of all trucks and goods."

President Calderón has also beefed up security at some transportation centers. "The military presence is greater than a few years ago," notes Averitt's Habe.

Yes, transportation infrastructure in Mexico leaves some room for improvement. But the current administration places a priority on investment in both infrastructure and commerce-friendly policies, which bodes well for the country's future. ■



You'd be mad too if your livelihood was left rotting on the ground. But that's exactly what's happening to farmers across the country whose grain is piling up because the nation's freight railroads won't haul it to market.

Poor planning, bad logistics and a broken rail system have left farmers buried. Colorado declared a state of emergency for wheat farmers. Railroads are telling North Dakota farmers to store their grain on the ground. And Kansas farmers have to go through bureaucratic hoops to get a permit before the railroads will even touch their grain. Meanwhile the railroads are jacking up rates on farmers and reporting record profits. **So while farmers are buried in piles of grain, railroads are buried in piles of green.**

As the Senate Commerce Committee holds a railroad oversight hearing today, we urge Congress to pass The Railroad Competition and Service Improvement Act of 2007 – S. 953 and H.R. 2125. It's time to level the playing field for the nation's grain fields.

CURE
PROMOTING RAIL COMPETITION
Consumers United for Rail Equity

ARC
Alliance for Rail Competition
Alliance for Rail Competition

National Association of Wheat Growers
National Association of Wheat Growers

National Farmers Union
National Farmers Union

NCGA
www.ncga.com
National Corn Growers Association

National Barley Growers Association
National Barley Growers Association

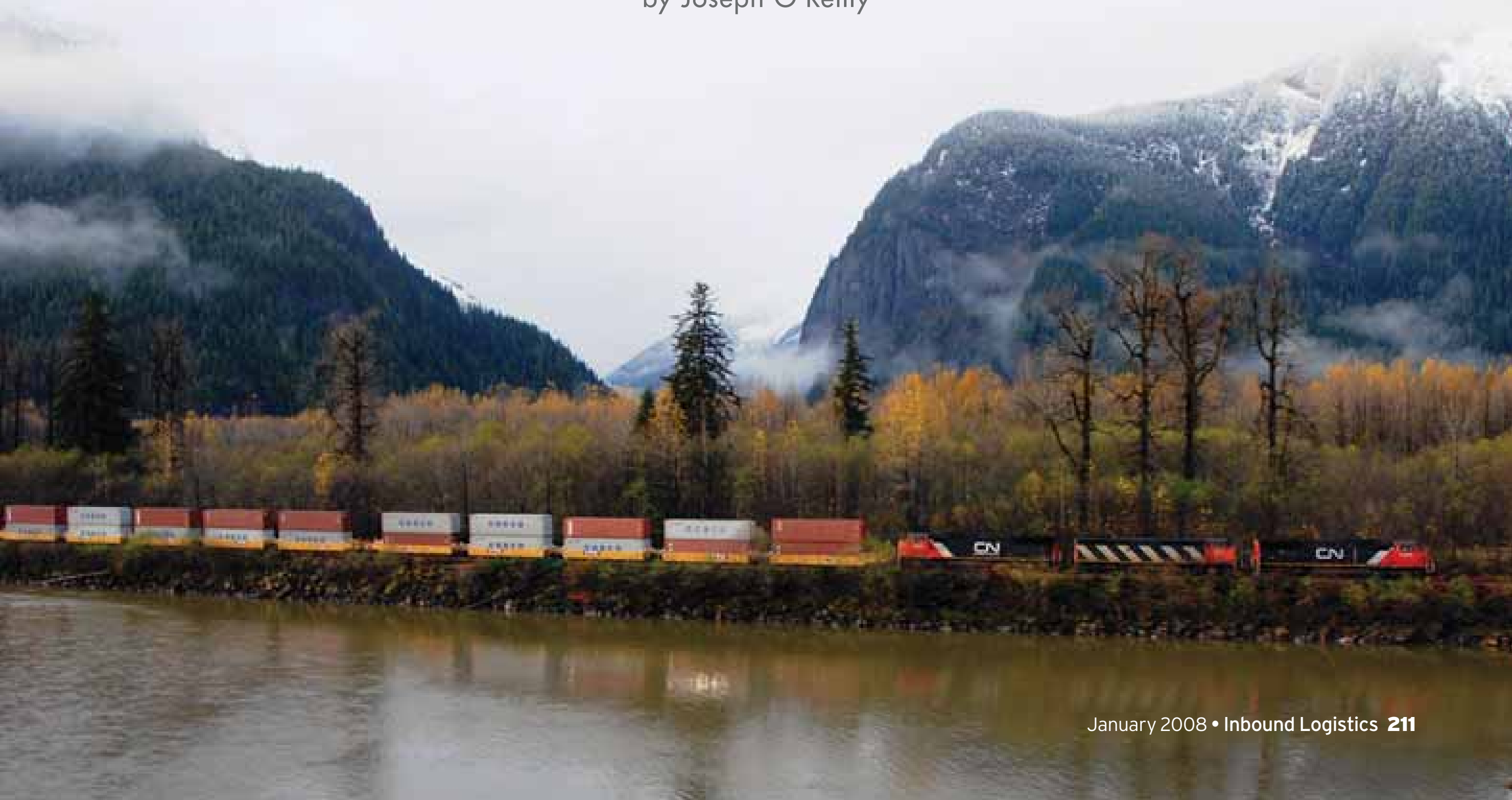
United States Beet Sugar Association

They might not yet have the clout of their long-in-the tooth but short-on-space peers, but that's exactly why shippers are gravitating toward their pull. These new logistics hotspots are committed to going to the ends of the earth—and then some—to meet shipper and consignee needs.

SPACE EXPLORATION

NEW FRONTIERS IN SITE SELECTION

by Joseph O'Reilly



SPACE EXPLORATION

Undoubtedly, offshoring is markedly shaping the outward-arcing trajectory of U.S. trade as enterprises routinely orbit the globe looking for new sourcing and manufacturing locations to expand production capacity, leverage labor economies, and seek out new sell-to markets. But its impact is equally apparent on the demand side of the chain.

Stateside consignees and shippers wary of looming congestion at capacity-choked U.S. ports are increasingly migrating toward smaller, inland ports such as Huntsville.

With congestion and capacity concerns recurring, and Asia-origin volumes expected to triple by 2020, consignees and shippers are tasked with engineering distribution networks that are elastic enough to accommodate fluctuating demand, unforeseen exceptions, and global expansion. Inevitably this begins with site selection and channel management. Businesses wary of present and future bottlenecks are exploring new places and spaces to better align demand to supply.

"Different companies have different priorities for 'siting' locations," says Matt McCollister, vice president of economic development, Columbus Chamber of Commerce. "It's often about location–where a business wants to be relative to where its customers are."

Transportation costs, finding a feasible place to reach final destinations via multiple modes, workforce availability, and operating costs also make the list of considerations.

"A company's philosophy depends on how it rationalizes and prioritizes these factors," adds McCollister. "An e-commerce fulfillment center, for example, might require more attention to labor and operating costs than other considerations."

Regardless of intention, businesses more deliberately project where they need to be–both in terms of strategy and geography–to balance the volatility of consumer demand with global ebbs and flows.

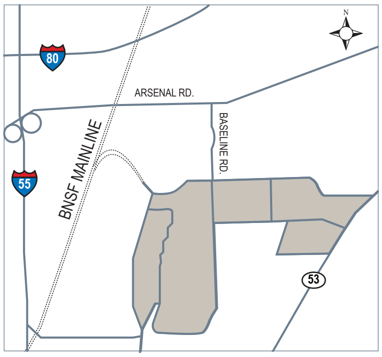
Globalization invariably forces companies to cast U.S. transportation and distribution in a new light. Calculating total landed costs across the supply chain presents further incentive to explore different transportation and distribution options and perhaps consider longer, reliable channels over shorter routes through unstable chokepoints. In turn, and given other contingency and capacity concerns, the quest for intermodal flexibility is steering site selection due diligence.

By necessity, stateside manufacturers and retailers cast furtive glances beyond developed hubs and congested distribution clusters, paying attention to where railroads, real estate developers, and transportation companies are migrating, and identifying new satellite locations for pulling and pushing product to market.

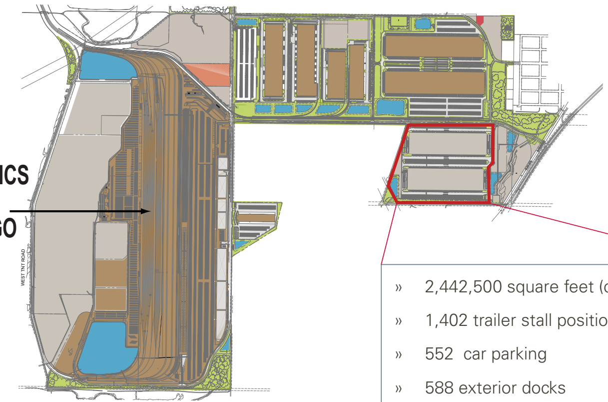
Local, regional, provincial, and state economic development interests and port facilities are playing their own part in this budding space play. From the Pacific Northwest to the Gulf Coast, an emerging crop of "familiar places with forgotten faces" and "sites yet seen" raise the curiosity of wandering minds.

They also raise the bar for customer service and financing, and developing transportation infrastructure and logistics resources – all in an effort to help bring U.S. businesses and freight to and from the outer limits of global supply chains. Welcome to the new frontier of site selection.

CHICAGO IMPORT DISTRIBUTION CENTER



BNSF LOGISTICS PARK CHICAGO



» 2,442,500 square feet (combined)
» 1,402 trailer stall positions
» 552 car parking
» 588 exterior docks
» 32' clear
» 8 drive-in doors
» Gated and secure

CENTERPOINT INTERMODAL CENTER / BNSF LOGISTICS PARK CHICAGO

Totaling nearly 2.5 million square feet, CenterPoint's newest Import Distribution Center is an ideal location for users needing a direct connection to Chicago from the west coast ports of L.A./ Long Beach, Oakland, or Seattle/Tacoma. CenterPoint Intermodal Center, anchored by the BNSF Logistics Park Chicago, is the nation's largest inland port and the only master-planned Inland Intermodal Logistics Park in North America.

» Direct access to BNSF Logistics Park Chicago
» On-site 24/7 overflow container storage
» Direct carload connections to both BNSF and UP Railroads
» Full interchange at I-55 and Arsenal Road
» Designated Foreign Trade Zone and Enterprise Zone
» Low Will County real estate taxes
» Flexible zoning for manufacturing/distribution/truck terminal/container management

Leasing & Sales:

Dan Leahy
630.691.0604

Adam Roth
630.691.0607

NAI Global™
Commercial Real Estate Services, Worldwide.
Logistics

NAI Hiffman
Commercial Real Estate Services, Worldwide.

Owner and Developer:

Neil Doyle
630.586.8173

Eric Gilbert
630.586.8157

CenterPoint Properties®

SPACE EXPLORATION

THE ROCKET CITY THRUST

HUNTSVILLE, ALA.

When International Paper rolled into the Port of Huntsville in 1986, it was among the few businesses that recognized the inland port's emerging potential. The port was in the process of developing its International Intermodal Center, while creating a footprint beyond its traditional air cargo capabilities – and the paper manufacturer was a willing partner.

"We were one of the first two shippers on the port's first day of operation and have been using it ever since," says Glen Wright, traffic manager, International Paper. "We have done all that we could over the years to support this facility because we realized that in the long run it could become a big asset for us–and it has."

The Memphis, Tenn.-based company is the largest white-paper producing company in North America. Located 35 miles away from the Port of Huntsville, its Courtland, Ala., mill sources raw wood from a primary 75-mile radius. In its manufacturing process, the production facility uses a high volume of bulk chemicals that come in via rail tankers, tanker trucks, and pneumatic tank trucks; oxygen from a plant in Decatur, Ala.; and two large natural gas pipelines.

International Paper manufactures product in rolls or cuts it into copy paper, then packages stock for companies including Staples, Hewlett Packard, and Office Depot. Its average production is about 3,100 tons per day, and approximately one-third of that is cut into copy paper.

The company initially began looking at the intermodal center as a more economical way to serve customers on the West Coast. At the time, intermodal consolidators were calling on International Paper to try and get its business.

"We decided we were going to ship our West Coast cargo over Huntsville and if the consolidators wanted a part of our business they would have to make containers available there," says Wright. "It was the opportunity

ALL ABOARD THE HEARTLAND EXPRESS

COLUMBUS, OHIO

Building on its air cargo transportation legacy, Columbus, Ohio, is fast becoming an intermodal hub thanks to rapid expansion at Rickenbacker Airport.

When the government turned over the Rickenbacker Air Force Base to the city and county in the late 1980s, the transition laid the blueprint for a cargo-dedicated multimodal hub that today serves as the focal point of Columbus' transportation infrastructure.

Rail/intermodal portends to be a major stimulus for the facility and the area as well. Aside from its existing air cargo capabilities and proximity to Interstates 270, 71, and 70, Rickenbacker will benefit from Norfolk Southern's new intermodal hub, which is being developed on 300 acres southwest of the airport. The new intermodal center is expected to handle more than 300,000 container transfers annually, increasing truck and rail freight throughput.

Norfolk Southern is also partnering with the Federal Highway Administration to develop the Heartland Corridor project, a $150-million plan to increase rail cargo capacity and facilitate freight movement between Virginia ports and Chicago. The potential for bringing double-stack capabilities on line between Virginia's ports and Ohio will have a major impact on Columbus' growth as a major distribution hub, says Matt McCollister, vice president of economic development, Columbus Chamber of Commerce.

When the corridor is complete, consignees can clear customs in Rickenbacker's FTZ zone, provided cargo is carried via bonded rail or truck carriers. Together with Rickenbacker Airport's current expansion plans, the promise of increasing volumes through the heartland will be a major boon to the area's economic prospects.

"When Norfolk Southern's intermodal facility is up and running we will have a convergence of transportation – an epicenter for intermodal," notes McCollister.

Long an air cargo hub, Columbus' Rickenbacker Airport is fast becoming a rail/intermodal crossroads for inbound container volume.

the port needed to prove to naysayers that it could be a player in the inbound international business."

Today, the Courtland facility moves product to California, Washington, Oregon, the Vancouver area, Arizona, and New Mexico through the Port of Huntsville, primarily using 40-foot steamship containers.

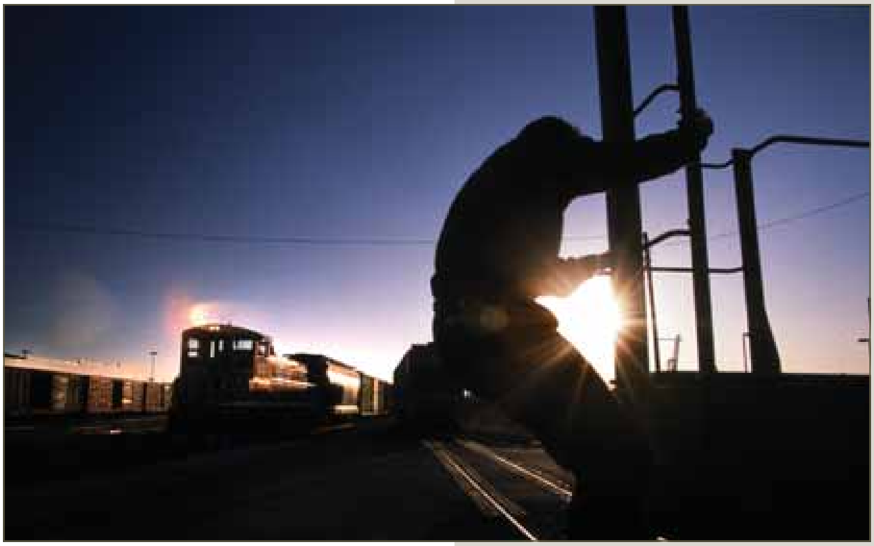
"Our use of 40-foot steamship containers is a win-win situation for us and the stack-train and steamship operators," says Wright. "We enjoy lower rates by stacking containers on trains; and the stack-train/steamship operators are paid for the use of their equipment."

REALIZING AN INTERMODAL DREAM

When International Paper began operations in Huntsville, small rail facilities and ramps in the area were beginning to grow obsolescent, observes Richard Tucker, executive director of the Port of Huntsville. The railroads then began closing down some of these ramps in favor of bigger cities.

"These circus ramps were inefficient, messy, and expensive to operate. They weren't integrated in any organized way," he says.

Ed Mitchell, then executive director of the Port of Huntsville and formerly



CAJUN FEVER

LOUISIANA

"Logistics is a boundary-spanning activity playing a significant role in both traditional and fast-growing industries," says Don Pierson, assistant secretary, Office of Business Development for Louisiana Forward.

So in resource-rich Louisiana – long a center for energy exploration and production, petrochemicals, forest products, and, more recently, manufactured goods – it's little wonder focusing on transportation and logistics is a foregone conclusion.

Given Louisiana's location in the fastest-growing region of the United States and at the center of Western Hemisphere trade, its transportation infrastructure and capabilities are well-developed.

Shippers have access to 31 states via the Mississippi River and its tributaries. From a maritime perspective, Louisiana's six deepwater ports handle more than 457 million tons of U.S. waterborne commerce annually. Four of the 11 largest U.S. ports (in foreign commerce tonnage) are in Louisiana, and the presence of six Class I railroads augment intermodal capacity and throughput.

Despite the devastating paths of Hurricanes Katrina and Rita, Louisiana is moving forward to help spur economic growth, diversify its industries beyond natural resources, and create incentives for businesses to locate distribution operations in the region.

"The outgoing administration was proactive in promoting business activities," says Pierson. "And the new leadership has been equally aggressive in moving to secure more private sector investment. "

Businesses such as Seffner, Fla.–based Rooms to Go, the largest furniture retailer in the United States, are taking advantage of the state's location and resources to expand their distribution operations. With about 135 stores in nine states throughout the Southeast, including three stores in Louisiana, the company plans to build an 850,000-square-foot distribution center and outlet store in Pearl River, La.

The retailer was using a temporary DC in Mobile, Ala., and was considering options in Mississippi but decided to take advantage of a $50-million Gulf Opportunity Zone (GO zone) bond to finance the new facility on a 60-acre site off Interstate 59.

"The decision to locate in Louisiana is based on where our volumes are coming from and this site's proximity to our stores and consumers," says Peter Weitzner, vice president of Rooms to Go.

The GO zone bond, a federal business incentive levied in the aftermath of Katrina, also weighed favorably in Rooms to Go's decision. "It allows us to finance the building with tax exempt bonds," notes Weitzner.

The retailer currently brings in most of its product from Asia and South America through Southeast and West Coast ports. Cargo is then delivered via rail and drayed to the DCs. Moving forward, Rooms to Go would like to consider shifting some volume through the Port of New Orleans if the opportunity presents itself.

Aside from several state and federal tax incentives, Louisiana's fiscal health also bodes well for courting new business. "Going into 2008 we have a $1-billion budget surplus, so we are not concerned about government reaching out for new tax revenue," says Pierson.

Louisiana is home to four of the 11 largest U.S. port facilities in terms of foreign commerce tonnage.

Central, Connected, Capable

Joplin, Missouri!

Your Supply Chain Link

- A strong, central location creates easy access to regional, national and North American markets.
- Efficient, cost-effective transportation routes connect Joplin to both coasts, as well as Canada and Mexico.
- More than forty trucking firms, three Class-I and short-line railroads, and air passenger and cargo services provide the capability to move products and people to and from key markets.
- A large, hard-working labor force has the capabilities to meet the highest level of customer demands.

Central location, market connections and a capable workforce are key links Joplin offers your supply chain system. Join us today at one of these great Joplin locations:

- 670 acres Crossroads Business and Distribution Park on I-44
- 1500 acres Wildwood Ranch development, rail served
- 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

FOR MORE INFORMATION
Rob O'Brian, CEcD/President
Joplin Area Chamber of Commerce
320 East 4th Street, Joplin, MO 64801
www.joplincc.com * robrian@joplincc.com
(phone) 417.624.4150
(fax) 417.624.4303

A NEW WORLD PORT

PRINCE RUPERT, BRITISH COLUMBIA

Tucked between the Coastal Mountains and the Queen Charlotte Islands lies the future of North American trade. Long a destination for intrepid tourists, the Port of Prince Rupert is cruising for cargo of a different sort these days.

Historically, Prince Rupert has been a regional export facility serving coal, grain, and forest products industries. Ten years ago, the port recognized that this cargo base was slowly eroding and it needed to shift attention to containerization. Prince Rupert's present and future plans are centered on this import-focused paradigm.

"We are building Prince Rupert as a gateway for transpacific trade – pulling, then pushing product into central Canada and the U.S. Midwest," says Shaun Stevenson, vice president of marketing and business development at Prince Rupert. "We have transitioned away from breakbulk capabilities to container facilities. In turn, our focus has shifted from regional export to continental import."

Because it is the deepest natural harbor in North America, and the closest port to Asia, shippers are beginning to tap Prince Rupert's potential as a major circumvent to the U.S. West Coast. Its newly opened Fairview Terminal has the capacity to move up to 700,000 TEUs annually, enabling seamless transshipment of containers to Canadian National's (CN) rail line.

CN is currently developing a transload operation and intermodal terminal in Prince George, B.C.–500 miles east of the port–to facilitate container movement to and from Asia. Last May, the railroad signed a contract with COSCO Container Lines Americas to become the first steamship company to route Asian freight through the port's container terminal and over CN's North American rail network.

"On Oct. 31, 2007, the first train arrived in Chicago from Prince Rupert in 92 hours, beating our estimate of 106 hours. That attracted a lot of attention," says Stevenson.

So did the fact that CN is running at 20-percent capacity on the line, has double-stack train capabilities throughout its system, and can run trains up to 14,000 feet in length through the lowest elevation crossing in the Rockies.

Moving forward, the port plans to triple the size of the terminals, add two new berths, and expand capacity to 1.5 million TEUs. The promise of cutting four days from the supply chain has already captured the attention of major retailers including Target and Ashley Furniture. Recognition of the port's capabilities and growing demand from stateside consignees will continue to drive the port's investment plans.

As the deepest natural harbor in North America and the closest port to Asia, the Port of Prince Rupert is currently helping shippers shave four days off their supply chain.

the first director of the Alabama Development Office, saw an opportunity to expand the port's capabilities beyond its air cargo strength. So he began addressing ways it might be able to fill these emerging infrastructure and transportation gaps.

"I remember meeting Ed Mitchell when he was hauling around a tabletop model of his dream for the Huntsville area and trying to sell people on his ideas," recalls Wright. "At the time, few believed his dreams could become reality. But in that first meeting I was convinced he would make it happen."

Mitchell did – and then some. He was instrumental in overseeing the development of the International Intermodal Center; assuring Huntsville received Port of Entry designation by U.S. Customs; securing 23 miles necessary to build the I-565 connector; as well as overseeing the land acquisition leading to the development of the Jetplex Industrial Park–which today houses more than 60 tenants.

"Ed Mitchell recognized the big picture of all transportation needs, not just air," says Tucker. "He envisioned a total transportation complex, looking out beyond where things were to where they needed to go. He translated the speed of air cargo operations to the intermodal facility."

A NEW SOP: SERVICE-ORIENTED PORT

Today the Port of Huntsville comprises the Jetplex Industrial Park, Huntsville International Airport, and the International Intermodal Center. In 2007, the port processed 45,468 intermodal containers, its sixth consecutive year of record growth.

Strategically, the intermodal center's proximity to International Paper's mill is advantageous in expediting deliveries between the two locations. "Infrastructure from the mill to Huntsville is good, with little congestion. One driver can turn four or five daily loads to Huntsville. If we go through Memphis, a driver can only deliver one load," says Wright.

The facility operates 24 hours a day, seven days a week, as far as Wright is concerned, and it assists draymen in allocating space to set empty containers for movement after hours. This type of collaboration is important for International Paper as it creates a level of service that permeates the entire transportation process.

"We maintain a close relationship with this facility and in turn it maintains a good relationship with our intermodal provider, drayman, steamship container provider, and Norfolk Southern Railroad," he adds.

This altruism has been a key factor in the port's development. Its focus on addressing the needs of the beneficial owner has allowed it to get the steamship lines and railroads to work collaboratively in everyone's best interests.

"The Port of Huntsville has made it a priority to sell to the consignee," says Mitch Bradley, director, International Intermodal Center. "We reach out to these companies and ask: What do you need? Where are your service lanes? What are your volumes?"

A HELPING HAND

The port has also received a helping hand from the railroad. "Norfolk Southern and the Port of Huntsville are inseparable," says Bradley. "Clearly, without the intermodal component, the port would not be as successful as it is now. In turn, we have brought a new perspective to the railroad, providing a model for how other intermodal facilities should operate."

Shippers such as International Paper value the attention to detail that the Port of Huntsville and its partners bring to the table–something that is difficult to find at other facilities.

"Major ports are big and bureaucratic and difficult to deal with, especially in a crisis," says Wright. "Huntsville can and does handle crisis situations for us. U.S. Customs and the Department of Agriculture are tremendous to work with–they schedule their workforce around the needs of the customers and carriers they serve."

This level of service, in essence, is the value proposition that lured International Paper to the port in the 1980s and remains a primary incentive for businesses today.

"If nothing else, we are creating an environment that allows us to capture some volume, while keeping everyone else competitive," says Bradley. "But we want to be a change agent and intermediary so end users can look at it all–a total system for domestic and international transportation needs." ■

NOW ARRIVING

Airport Almanac

Need to know which express carriers service SDF? Sending major shipments through ANC? Wondering if JFK has an FTZ?

Check in with our profiles of the top six U.S. cargo airports for the answers.

JOHN F. KENNEDY INTERNATIONAL AIRPORT	222
LOUISVILLE INTERNATIONAL STANDIFORD FIELD AIRPORT	224
MEMPHIS SHELBY INTERNATIONAL AIRPORT	226
TED STEVENS ANCHORAGE INTERNATIONAL AIRPORT	228
MIAMI INTERNATIONAL AIRPORT	230
LOS ANGELES INTERNATIONAL AIRPORT	232

Serving the Big Apple and Beyond

JOHN F. KENNEDY INTERNATIONAL AIRPORT JFK

Owned and operated by the Port Authority of New York and New Jersey, JFK International Airport lies in the southeastern section of Queens County, New York City, on Jamaica Bay. The airport is15 miles from midtown Manhattan and serves as the Northeast region's U.S. Customs headquarters.

The Port Authority expects continued growth in exports and imports in the coming years–much of which will come from Asia, India, and Eastern Europe. The airport is undergoing a $9.5-billion redevelopment program, which will include cargo warehouses, offices, and the ground-service equipment maintenance facility. The improvements will also feature new, direct access to the Van Wyck Expressway, JFK's main entrance; a direct connection to taxiways A and B; a 496,109-square-foot aircraft ramp, which can accommodate six Boeing 747 freighters; and a 150-foot-wide clear-span (column-free) space with 24-foot-high ceilings for unimpeded cargo movement within each warehouse.

AREA:
4,930 acres;
30 miles of roadway

2006 CARGO VOLUME:
1.8 million tons

DID YOU KNOW

- The New York-New Jersey air cargo network is the world's only gateway to include multiple Foreign Trade Zone (FTZ) designations.
- The JFK Cargo premises house a Vetport animal care facility and a U.S. Post Office airport mail facility.
- The Air Cargo Center comprises 500 miles of access and service roadways, reaching the nation's interstate highways as well as the Port's marine terminals and major railroads. In fact, goods can virtually move over road from the New York/New Jersey region to Chicago, Washington, D.C., Dallas, and even Montreal without ever encountering a traffic light.

AIR CARGO FACILITIES

1 million sq. ft. of office and warehouse space dedicated to 800 cargo brokers, freight forwarders, and container freight station operators.

1,700 acres are dedicated to air cargo, with 4.5 million sq. ft. of warehouse and storage facilities, including climate-controlled areas and sections for inspection and assembly.

The entire air cargo area is designated as a **Foreign Trade Zone (FTZ)**.

RUNWAYS

JFK has 4 parallel runways, including 4L-22R, 4R-22L, 13L-31R, and 13R-31L all aligned at right angles. The **total runway length is nearly nine miles**, and all runways have high-intensity runway center lights and taxiway lead-off lights. The surfaces are also grooved to enhance safety.

TOTAL LANDINGS

2,723 freight flights inbound and outbound.

ON THE MAP

40° 38′ 28.5″ N, 73° 46′ 41.9″ W;
12.7 ft. above sea level.

CARGO CARRIERS

ABX Air, Air Transport International, Astar Air Cargo, Atlas Air, Cargoitalia, Cargolux, Evergreen, FedEx, Gemini Air Cargo, Kalitta Air, Nippon Cargo Airlines, Polar Air Cargo, Prince Edward Air, Southern Air, UPS.

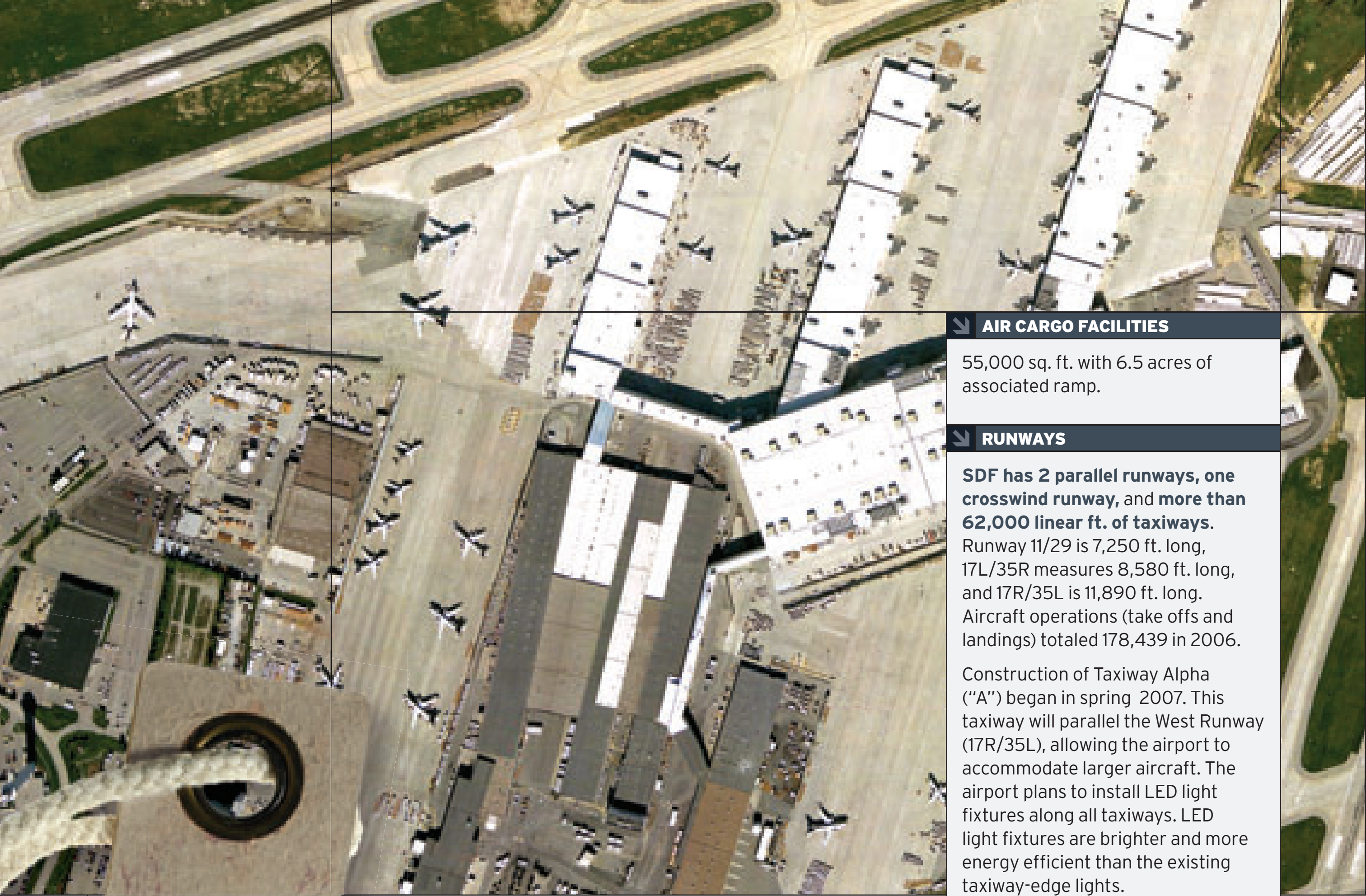
COMBI CARRIERS

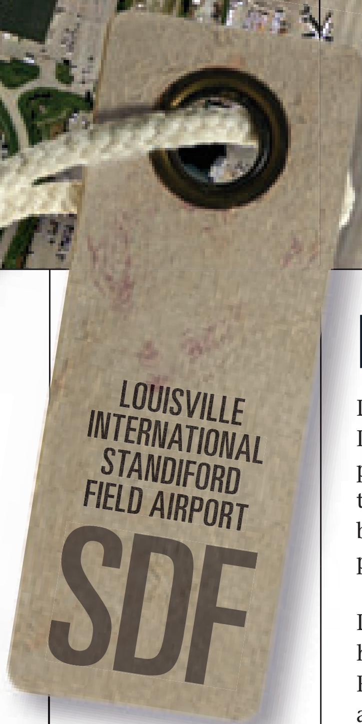
Air China, Air France, Alitalia, Asiana Airlines, Cathay Pacific, China Airlines, El Al, Emirates, Icelandair, Japan Airlines, Korean Air, Lufthansa, Qantas, Royal Jordanian, Saudi Arabian Airlines, South African Airways, VARIG LOG.

ON-SITE SHIPPER FACILITIES

None, but JFK is home to DHL Global Forwarding's New York International Gateway.

JFK Expressway & South Cargo Road • Jamaica, NY 11430 • 718-244-4444 • **www.kennedyairport.com**





AREA:
1,200 acres

2006 CARGO VOLUME:
4.3 billion pounds of cargo and mail; 36,124 cargo landings

Keeping Cargo Moving

Located 10 minutes from downtown, Louisville International Airport was ranked the third-busiest cargo airport in North America and the ninth-busiest in the world in terms of total amount of cargo handled in 2006. Operated by the Louisville Regional Airport Authority, the airport is perhaps more widely recognized as home to UPS.

The carrier established its overnight delivery hub in Louisville in 1981. In 2005, UPS chose Louisville for its heavy airfreight hub after purchasing Menlo Worldwide Forwarding and closing its Dayton, Ohio air hub. UPS then added a new, $84.5-million, 653,000-square-foot heavy-freight facility to existing operations in Louisville.

In May 2006, UPS announced a $1-billion expansion that will increase sorting capacity over the next five years, and in June 2006, the heavy airfreight hub began its express airfreight operation. By 2010, Worldport will expand from 1.1 million square feet to 5.1 million square feet – the equivalent of more than 113 football fields.

AIR CARGO FACILITIES

55,000 sq. ft. with 6.5 acres of associated ramp.

RUNWAYS

SDF has 2 parallel runways, one crosswind runway, and **more than 62,000 linear ft. of taxiways**. Runway 11/29 is 7,250 ft. long, 17L/35R measures 8,580 ft. long, and 17R/35L is 11,890 ft. long. Aircraft operations (take offs and landings) totaled 178,439 in 2006.

Construction of Taxiway Alpha ("A") began in spring 2007. This taxiway will parallel the West Runway (17R/35L), allowing the airport to accommodate larger aircraft. The airport plans to install LED light fixtures along all taxiways. LED light fixtures are brighter and more energy efficient than the existing taxiway-edge lights.

COMBI CARRIERS

American/American Eagle, Delta/Delta Connection, Northwest/Northwest Airlink, Southwest Airlines, United Airlines/United Express, Continental, ExpressJet, US Airways Express

EXPRESS CARRIERS

Excel MSAS North American Logistics, FedEx, Tyme-It Transportation, UPS, U.S. Postal Service

? DID YOU KNOW

■ Louisville International serves as home to the Kentucky Air National Guard. Its 123rd Airlift Wing provides worldwide theater airlift for U.S. military and humanitarian operations. The wing is equipped with 12 C-130H model aircraft. Eight squadrons carry out the unit's mission by providing administrative and logistical support.

600 Terminal Drive • Louisville, KY 40209 • 502-368-6524 • **www.flylouisville.com**

The Home of Cargo Central

Memphis Shelby Airport is owned and operated by the Memphis Shelby County Airport Authority. The best news for air cargo operators is the construction of Cargo Central–a facility spurred by the creation of a new taxiway, currently in the works. Designed in five phases, Cargo Central will feature 1.5 million square feet of ramp area. The first phase of Cargo Central was completed last spring with the construction of 36,000 square feet of space. Each subsequent phase offers 61,500 square feet of additional space. Cargo Central will service all critical needs, such as high-security, cold storage, and hazardous materials storage, along with business-friendly lobbies, reception areas, front-office administration, and management spaces.

AREA:
3,900 acres

2005 CARGO VOLUME:
3.7 million tons

AIR CARGO FACILITIES

Will offer **1.5 million sq. ft. of ramp area** when the Cargo Central facility is completed.

RUNWAYS

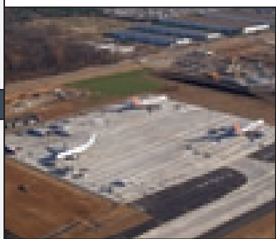
MEM has four runways: 18R-36L is 9,320 ft. long/150 ft. wide; 18C-36C is 11,120 ft. long/150 ft. wide; 18L-36R is 9,000 ft. long/150 ft. wide; and 9-27 is 8,936 ft. long/150 ft. wide.

CARGO CARRIERS

FedEx, UPS, ABX Air, Baron Aviation, Air Transport International, Mountain Air Cargo, DHL.

COMBI CARRIERS

AirTran, American/American Eagle, Comair, Continental, DHL, Delta, KLM, Mesaba Aviation, Northwest/Northwest Airlink, United Express.



DID YOU KNOW

■ FedEx handles 95 percent of the air cargo at Memphis International and the airport is surrounded by warehouse and distribution facilities–one of the largest concentrations in the world. These facilities house products as varied as just-in-time surgery and orthopedic devices, home decor products, and DVDs, all of which are shipped from Memphis to destinations around the world.

2491 Winchester Road, Suite 113 • Memphis, TN 38116 • 901-922-8000 • **www.mscaa.com**

Supply Chain Management Solutions—
To fit YOUR business.

When it comes to supply chain management, you need a solution rooted in efficiency and cost-effectiveness. But most importantly, you need a solution that suits your company. Perfectly.

At Landair, we customize a strategy according to your specific needs—one that gives you all the service, efficiency and convenience you deserve, utilizing our expertise and experience in warehousing and distribution, dedicated contract carriage, and transportation.

For us, it's about being flexible and adapting to your situation regardless of the combination of services you need:

- Contract facility management
- Commercial & public storage
- Dedicated contract carriage
- Customized solutions
- Transportation management
- Order fulfillment
- Supplier/Inventory management
- On-site contract labor
- Port vanning/de-vanning

Call or visit us online to see how one of our supply chain management solutions can improve your bottom line.

www.landair.com
1.888.526.3247 ext.1230

Landair
Solutions from the Ground Up

SmartWay Transport Partner

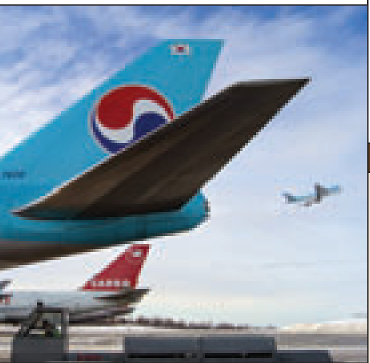
Connecting to the Far East

AREA:
4,837 acres

2006 CARGO VOLUME:
Number one in the world for landed weight of cargo aircraft; 49,668 landings

Located three miles southwest of downtown Anchorage, ANC serves as a major link to the Far East for global air cargo forwarders. An average of 650 wide-body cargo flights land at the airport weekly, making ANC the number-one airport in the United States for landed weight of cargo aircraft, and third in the world for cargo throughput. The key growth driver at ANC is cargo, specifically in the Asia to North America market, where annual international cargo aircraft operations are forecasted to increase 5.2 percent through 2027.

FedEx and UPS operate major hubs at the airport and both plan to expand at Anchorage as trade with the Far East continues to grow.



DID YOU KNOW

- As of January 2004, a law permits air cargo to or from a foreign country to be transferred to another airline in Alaska without being considered to have broken its international journey. The law allows the carriage of international origin or destination cargo on foreign aircraft between Alaska and other points in the United States in the course of continuing international transportation.
- The Anchorage Airport has never closed for snow. In 2007, ANC received the Balchen/Post award for excellence in the performance of airport snow and ice control during the winter of 2006-2007. This is the fourth year the airport received the award.
- The total economic significance of Anchorage Airport is 18,434 jobs with a payroll of $850 million. That accounts for one in eight jobs in Anchorage.

FREIGHT AREA

200 acres with about 200 more acres ready for development as needed.

RUNWAYS

ANC has three runways: Runway 7L/25R is 10,600 feet long/150 feet wide; 7R/25L is 10,900 ft. long/150 ft. wide; and 14/32 is 11,584 feet long/150 ft. wide.

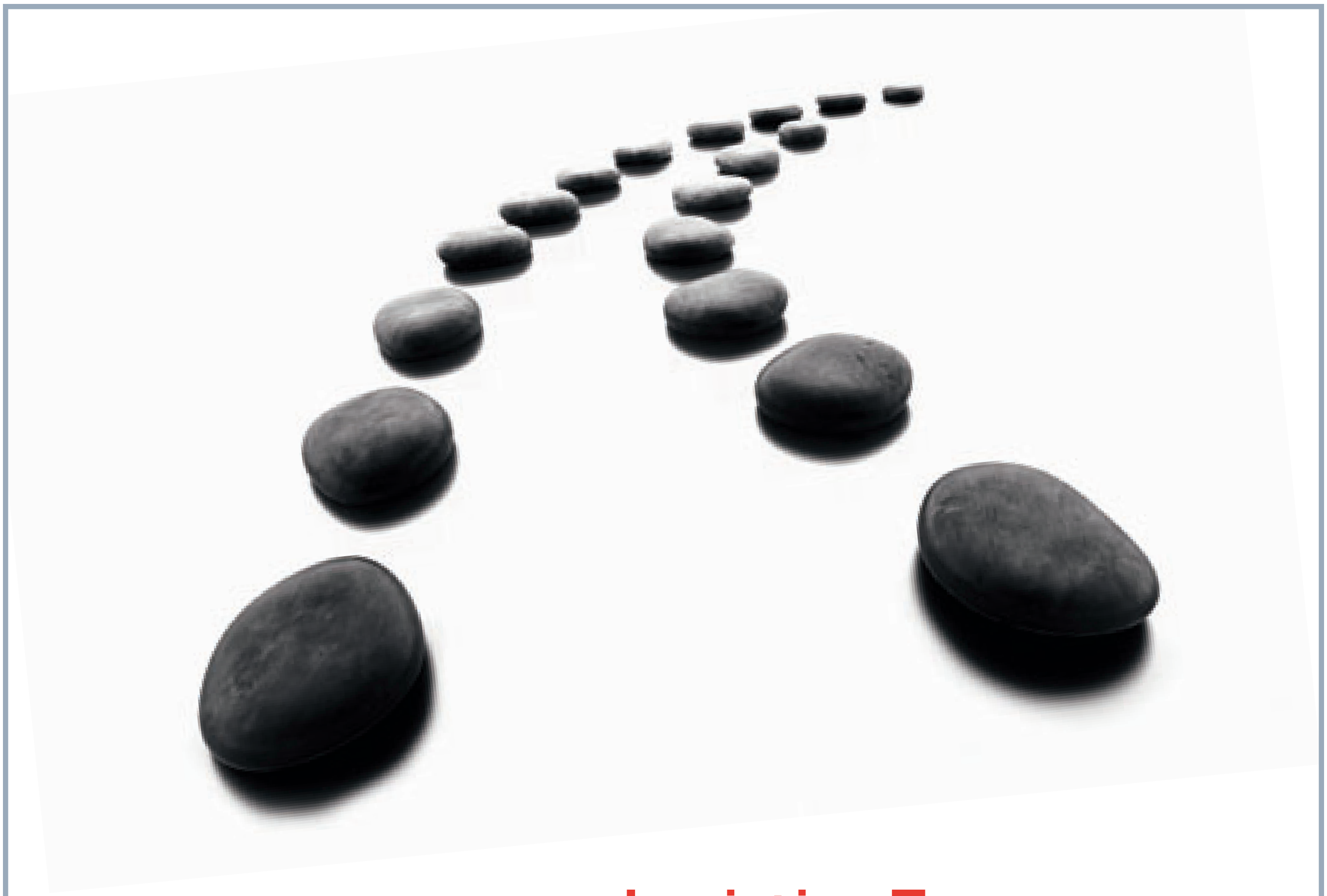
CARGO CARRIERS

ANC has 30 major air cargo carriers operating out of its facilities, including: Air Canada, Air China, Air Macau, ANA, Asiana Airlines, Atlas Air, Cargo 360, Cathay Pacific, China Airlines, China Southern, Dragonair, Evergreen, FedEx, Gemini Air Cargo, Japan Airlines, Kalitta Air, Korean Air Cargo, Nippon Cargo Airlines, Northwest Air Cargo, Polar Air Cargo, Qantas, Shanghai Airlines, Singapore Airlines, Southern Air, Tradewinds Airlines, Transmile, UPS, World Airways.

FREIGHT FORWARDERS

Airland Transport, Alaska Air Forwarding, Commodity Forwarders, DHL, CEVA, Lynden International, Movers Inc., Panalpina.

4600 Postmark Drive • Anchorage, AK 99502 • 907-266-2526 • **www.anchorageairport.com**



Gateway to the Caribbean and Latin America

Miami International Airport, operated by the Miami Dade Aviation Department, lies eight miles northwest of Miami, Fla., and serves as a gateway to the Caribbean and Latin American countries. The majority (71 percent) of MIA's import cargo comprises perishable products including seafood, flowers, fruits, vegetables, and clothing. Cargo exported from MIA mostly consists of computers and peripherals, telecommunications equipment, industrial machinery and parts, oil and gas drilling machinery, and vehicle parts and tires.

Miami Dade Aviation • P.O. Box 025504 • 305-876-7000 • **www.miami-airport.com**

AIR CARGO FACILITIES

MIA has more than **2.7 million sq. ft. in 17 new cargo buildings**, apron space of 3.8 million sq. ft. and 48 common-use cargo positions for large aircraft, and 32 leased cargo positions (19 widebody/13 narrow body).

RUNWAYS

MIA has four runways, including 9-27 at 13,000 ft. long; 8R-26L at 10,500 ft. long; 12/30 at 9,355 ft. long; and 8L-26R, which is 8,600 ft. long.

CARRIERS

71 scheduled and 25 charter air carriers - of which 41 are all-cargo carriers - serve MIA's extensive air network. MIA's airlines offer service to approximately 150 cities on four continents, with freighter service operating to 91 global destinations.

AREA:
3,230 acres

2006 CARGO VOLUME:
2 million tons of cargo

DID YOU KNOW

■ More than 1,000 freight forwarders and almost 300 customs brokers are located around the airport. Their business is expedited by a unique "one-stop" Cargo Clearance Center, housing approximately 300 inspectors from U.S. Customs and Border Protection (CBP); Department of Agriculture, Fish and Wildlife Service; and Food and Drug Administration. It provides a 24-hour cargo clearance operation.


Let's just say we can handle anything.
Come up with new ways to cut time to the market. We're ready.
Call Carlos Buqueras or Manuel Almira at 800-421-0188,
954-523-3404 or visit www.broward.org/port
PORT EVERGLADES
BROWARD COUNTY, FLORIDA
FLORIDA

AREA:
3,425 acres

2006 CARGO VOLUME:
2.1 million tons

International Trade Nexus

Los Angeles International Airport, located nine miles southwest of Los Angeles, is a major cargo distribution center and a gateway to the Pacific Rim with 1,000 cargo flights each day linking Los Angeles with the world. Every major international air carrier serving the Pacific calls at Los Angeles.

LAX is the key transportation center for one of the world's most dynamic economies. The greater Los Angeles region's international trade is valued at $200 billion, with LAX alone responsible for more than $68 billion in exports and imports.

AIR CARGO FACILITIES

LAX has **2.1 million sq. ft. of space dedicated to cargo on 194 acres**. Cargo handling facilities are located at the 98-acre Century Cargo Complex; the 57-acre Imperial Complex; the Imperial Cargo Center; and a number of terminals on the south side of the airport.

RUNWAYS

LAX has five runways: 24R/6L is 8,925 ft. long; 24L/6R is 10,285 ft.; 25R/7 is 12,090 ft.; and 25L/7R is 11,095 ft. All are 150 ft. wide except for 25L/7R, which is 200 ft. wide.

CARGO/COMBI CARRIERS

20 cargo carriers serve LAX, including United Airlines, Virgin Atlantic Airlines, Qantas, Singapore Airlines Cargo, Lufthansa, Japan Airlines, Korean Air, China Airlines, Delta, Air Canada, Asiana, Alaska Airlines, British Airways, Southwest Airlines, Mercury Air Cargo, and FedEx.

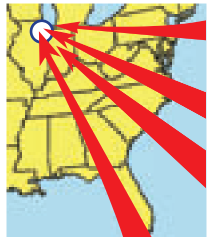
DID YOU KNOW

- More than half the cargo at LAX arrives and departs in the bellies of passenger aircraft.
- Vegetables, fruit, and nuts are the top export commodities in terms of tonnage from LAX, accounting for 15.1 percent of total weight. Apparel is the leading import commodity, with the majority of volume coming inbound from China.

No. 1 World Way • Los Angeles, CA 90009 • 310-646-4265 • **www.airports.ci.la.ca.us/lax**

THAT'S THE THING ABOUT CHICAGO. WE'RE ALWAYS THINKING. (Even this ad is sideways for a reason.)

An industrious Chicagoan once looked at the average hot dog bun and realized a lot more could fit in there than just the average hot dog. So in went mustard, onions, relish, tomatoes, peppers, even a pickle. It's kind of like buying a hot dog and getting a free salad at the same time. Getting more – that's Chicago style. • Al Capone is kind of a legend here. He sells a lot of T-shirts and postcards. During Prohibition when alcohol was, well, prohibited, entrepreneurs like Al figured out how to meet consumers' thirsty demand by, shall we say, circumventing certain government regulations. Though his methodology was dubious, his desire to put the client first and his refusal to accept limitations are traits we can all admire. • During the 1968 Democratic National Convention, demonstrators gathered in Chicago to protest the war in Vietnam. When the tear gas cleared, ☮ many people were able to see the war for the futile agenda it was. Having the conviction to create change is as much Chicago as snow in March. • Looking to trump the Eiffel Tower unveiled four years earlier, organizers of the 1893 Chicago World's Fair solicited ideas from the country's brightest architectural minds. But it was an unknown local engineer who created the winning idea, a giant steel wheel that carried passengers on a joy ride. His name? George Washington Gale Ferris. • Until recently, road weight limits forced overseas companies shipping to the U.S. to break down and lighten containers at the coast. Meaning more containers. And higher costs. But now with the Chicago Land Bridge from Nexus, it's like you can ship directly from overseas to Chicago. So it will save companies and managers like you millions of dollars. (We knew that would get your attention, too.) The Chicago Land Bridge. An innovation that will change the future of shipping by overcoming limits and giving you more. Glad we thought of it. Contact us at sales@teamnexus.com to learn more.



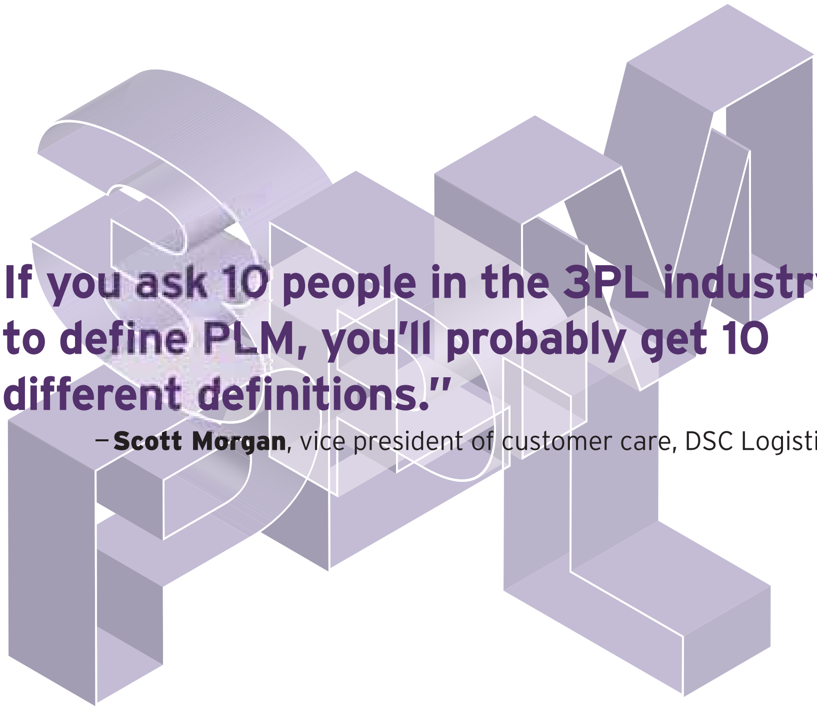
Or call Jen Hansen at 800-536-5220.

NEXUS® DISTRIBUTION CORPORATION

3PLs & PLM: RETURNS ON INVESTMENT

Is product lifecycle management the next market opportunity for third-party logistics providers?

by Marty Weil



"If you ask 10 people in the 3PL industry to define PLM, you'll probably get 10 different definitions."

—**Scott Morgan**, vice president of customer care, DSC Logistics

Product lifecycle management (PLM) solutions have traditionally been limited to discrete manufacturing industries where product variability and complexity and dense supply networks placed a premium on end-to-end visibility into and control over multiple processes. Increasingly, however, demands for these types of services are crossing industry verticals, as consumer goods and food and beverage manufacturers recognize that outsourcing functional aspects of product development, from conception through fulfillment, can reinforce supply chain management best practices.

Given this new demand and the current trend toward outsourcing, the third-party logistics industry (3PL) is closely following PLM's lead. In turn, traditional PLM technologies are slowly morphing into what might be termed "3PLM" services, as 3PLs bend and apply solutions to meet the unique needs of their customers.

Broadly, PLM refers to the succession of stages a product goes through, from design to after-shelf disposal. It's the management of these stages that logistics providers eye as potential areas for growth in an industry thirsting for new revenue sources. Still, many 3PLs define PLM in narrow terms or use the concept as a catch-all for a wide range of services that fall under its umbrella.

"If you ask 10 people in the 3PL industry to define PLM, you will probably get 10 different definitions," says Scott Morgan, vice president of customer care at DSC Logistics, a 3PL based in Des Plaines, Ill.

Whether loosely or strictly defined, however, "PLM is poised to become the next evolution in 3PL outsourcing," observes Doug Christensen, former CEO of NAL Worldwide, and current managing director of Chapman Associates, a mergers and acquisitions advisory firm based in Schaumburg, Ill.

To date, companies have seldom outsourced the complete supply chain lifecycle to a single 3PL.

"Progressive 3PLs have attacked PLM from several different angles," says Christensen. "Some have developed individual solutions–off-the-shelf, proprietary, and modified off-the-shelf–that address single supply chain components such as sample or new product launches, forecasting, purchase order management, physical flow management, warehousing, transportation management, and reverse logistics."

View of the Pipeline

Third-party logistics providers engaged in this function-by-function approach use visibility tools to attain a seamless view of products throughout the entire PLM pipeline.

"Some 3PLs have created a complete supply chain management database to track products from manufacturing inception right through to their end of life," Christensen adds.

While PLM solutions have traditionally been used in discrete manufacturing supply chains, consumer goods and food and beverage companies are learning the value of outsourcing product lifecycle functions to 3PLs.

In this regard, product lifecycle management appeals to some 3PLs because it encompasses services they already offer. Growing acceptance of PLM as an outsourcing strategy is also reflected in how the 3PL industry is diverging.

"At one end, in the majority, are low-cost, low-service 3PLs," says Benjamin Gordon, managing director of BG Strategic Advisors, a global outsourcing and supply chain strategy advisory firm in Palm Beach, Fla. "They might be truck brokers, single-location public warehouse companies, or other basic logistics services providers. These companies historically compete on price and their market share is declining."

3PLs that have achieved the most success, however, are those that have expanded their offerings–services that are most likely to embrace PLM capabilities.

"Most 3PL growth has been in value-added services, such as subassembly, kitting, freight forwarding, truck brokering, crossdocking, and other complementary services," notes Gordon. "A handful of companies are making aggressive investments in those areas, and PLM fits within that context."

"A few years ago, we were paying people to take these products away. Now they're paying us, on behalf of our customers, to pick them up."

–**Bill Conley**, president, ATC Logistics and Electronics

Can-do Attitude

Dallas-based Greatwide Distribution Logistics (GWDL) provides a brand of PLM capabilities that comes close to encompassing a product's entire lifecycle.

Vin Gulisano, president of GWDL, defines PLM as "raw material management–from middle management to finished product to end consumer delivery–for a specific product line." For several years, GWDL has provided end-to-end product lifecycle management to beverage can maker Rexam, a major supplier to Coca-Cola, Anheuser-Busch, Pepsi, and other bottlers in the United States.

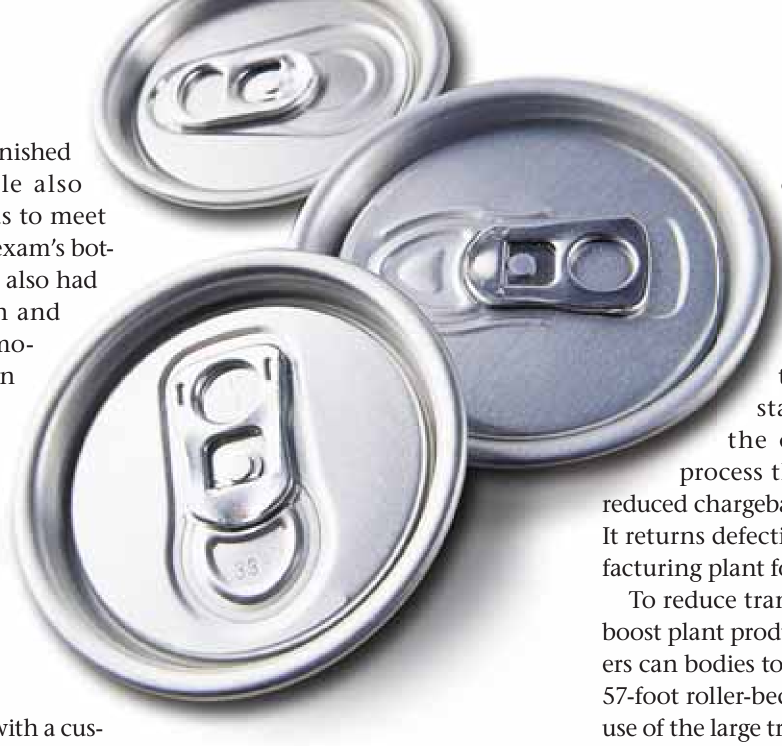
The beverage industry isn't only seasonal, it's also extremely sensitive to quality control. One ongoing challenge for vendors such as Rexam is creating a seamless distribution pipeline that maintains both cost and quality consistency while matching swings in volume due to demand variability.

Rexam approached GWDL to help manage existing production operations at its plants, rather than finished product and raw materials storage. Total visibility and inventory control were essential to making this happen.

GWDL began working toward a solution that delivered total visibility

of both raw materials and finished product inventories while also imposing quality standards to meet the stringent demands of Rexam's bottling facilities. The solution also had to address space allocation and labor flexibility to accommodate the vendor's peak season demands.

The companies worked together to create a single supply chain solution that incorporated raw materials, finished product (can bodies), filled product, and transportation.



Top of the Pops

GWDL presented Rexam with a customized package of distribution and transportation solutions specifically designed to meet the requirements of the beverage industry. The process begins when GWDL receives raw aluminum coils from manufacturers such as Alcoa, Logan Aluminum, and Alcan Aluminum. These materials generally are delivered via railcar, then cross-docked to Rexam's facility using a kanban process.

Rexam manufactures the cans and palletizes the product, which is then loaded onto dedicated GWDL trailers and delivered to the 3PL's warehouse for storage and distribution.

GWDL receives orders from the can manufacturer for just-in-time delivery to the brewery or to a soft drink producer for filling. Prior to delivery, GWDL staff visually inspects the cans for damage, a process that has significantly reduced chargebacks for quality issues. It returns defective cans to the manufacturing plant for recycling.

To reduce transportation costs and boost plant productivity, GWDL delivers can bodies to the filling plants in a 57-foot roller-bed trailer. Through the use of the large trailer, GWDL increases the number of pallets it can deliver per truck, and allows for specialized unloading direct to production lines at the plant.

"We're the conduit," says GWDL's Gulisano. "We work with the aluminum manufacturer, the bottling company, and the beverage

Rexam, a beverage can manufacturer, is currently working with Greatwide Distribution Logistics (GWDL) to integrate transportation and distribution of product within its supply chain. GWDL serves as a conduit for receiving aluminum materials from suppliers, storing finished goods in its warehouse, transporting cans to beverage producers for filling, then moving product to distributors and resellers.

manufacturers. We bring everything together for Rexam, including transportation and warehousing."

In addition, GWDL has instituted a dunnage sortation program with Rexam and Coca-Cola in which specialized, 44-inch by 56-inch plastic beverage pallets and plastic protection sheets placed between layers are sorted and reused if they meet quality criteria. GWDL manages, inspects, and sorts all dunnage and delivers it back to the can manufacturer via dedicated transportation equipment.

To further complete the supply chain cycle and save additional round-trip transportation costs, GWDL provides finished goods distribution for several customers, bringing the filled product back to separate warehouses nearby with the same dedicated transportation equipment. Product then ships to major distributors and customers throughout the region. To handle large seasonal builds wrapped around major holidays and promotions, GWDL leverages a multiple warehouse network, providing maximum space and labor flexibility to its beverage-producing clients, along with increased visibility and service levels.

A PLM Partnership

GWDL has also been able to centralize Rexam's customer service functions, further reducing overhead and costs.

"This partnership is unique because it requires a deep understanding of another company's operations," says

Gulisano. “This is at the opposite end of the continuum where trucks back up to the delivery dock and simply offload pallets for storage in a warehouse facility. Rexam’s supply chain is deeply woven into GWDL’s organization, requiring specialized knowledge of its business.”

Trend in Reverse

As Gulisano points out, GWDL’s comprehensive PLM service offerings are the exception, not the rule, in the 3PL industry. Some industry observers such as Doug Christensen, however, believe that soon “3PLs will be expected to provide this kind of service–and will do so efficiently, effectively, and quickly.”

One primary factor driving the growth of PLM services is that third-party logistics providers now recognize that the reverse logistics cycle exists.

“Logistics service providers no longer view PLM as a cost center, but rather as a potential profit center and certainly as a customer-service function,” says Christensen. “From a technology standpoint, reverse logistics focuses on reusing parts–through cannibalization of defective units and harvesting of good components or through product testing and repair.”

ATC Logistics and Electronics (ATCLE), based in Fort Worth, Texas, provides this type of PLM service to consumer goods customers.

“We focus on high-end electronics and serialized devices with velocity demands,” says ATCLE President Bill Conley. “For one electronics customer, we’re involved in removing component parts from its products, such as batteries, when they reach the end of their useful life. We make sure that the ferrous and non-ferrous metals are reused or recycled, and the remaining elements are disposed of in accordance with EPA standards.”

This service adds up to considerable time and cost savings for ATCLE customers. “We are taking a step out of the customer’s supply chain,” Conley continues. “In this case, it also means creating an additional source of revenue for the customer. A few years ago, we were paying people to take these products away. Now they’re paying us, on behalf of our customers, to pick it up. We’ve turned what used to be a cost center into profit.”

ATCLE’s reverse logistics program may not be an end-to-end solution, but it’s this kind of innovative thinking that is helping 3PLs mine new opportunities for developing services that cover more areas of a product’s lifecycle.

“As cycle times get shorter and shorter, it will be paramount for 3PLs to provide PLM services,” Christensen says. “For 3PLs, PLM is in its infancy and the demand for it will only increase.

“It’s difficult to know for sure what PLM activities might look like in five years, but certainly they will continue to expand and change as time progresses,” Christensen adds.

And if history is any indication, third-party logistics providers will grow and adapt to meet their customers’ PLM demands. ■

by William Atkinson

Message On a Bottle

Thanks to new pedigree technology, pharmaceutical manufacturers and sellers no longer find establishing chain of custody a bitter pill to swallow.

The increasing volume of counterfeit drugs entering the pharmaceutical supply chain has created a challenge for the industry and for government regulators. Until recently, traceability stopped at the manufacturing process. Now, regulations require drug pedigrees to improve supply chain security and prevent counterfeiting.

A pedigree, or certified chain of custody, details each leg of a drug's distribution – from the manufacturer, through acquisition and sale by any wholesaler or repackager, until final sale to a pharmacy or person administering or dispensing the drug.

In addition to preventing the distribution of counterfeit drugs, pedigrees provide full visibility during recalls and security problems. They can also help prevent Medicare fraud and other chargeback scams.

Under federal legislation known as the FDA Prescription Drug Marketing Act (PDMA), all drugs distributed by wholesalers, distributors, or repackagers require pedigrees, unless the manufacturer designates the seller as an Authorized Distributor of Record (ADR) for that drug. Manufacturers are also exempt from the law.

In addition to the PDMA, the majority of states – approximately 35 – have pharma supply chain pedigree legislation either in effect or in progress.

"State pedigree laws began in the early 1990s," explains Diane L. Darvey, Pharm.D., JD, director of pharmacy regulatory affairs for the National Association of Chain Drug Stores (NACDS), Alexandria, Va. "Some are more stringent than the PDMA; others less so."

STATING THE RULES

State regulations related to authentication and certification requirements, lot number, expiration date, returns, and reporting requirements vary. In Florida, for example, all drug wholesale distributors must include pedigrees to show chain of custody. The pedigree can be faxed on paper, sent via EDI, or transmitted online using electronic pedigree (ePedigree) software.

CONTINUED FROM PAGE 245

"In Florida, pedigree information must be supplied down to the lot number," notes Steve Perlowski, vice president industry affairs for the NACDS. "If a case contains 48 bottles, for example, each bottle must have its own pedigree."

California's pedigree legislation, which goes into effect Jan. 1, 2009, will have the strictest requirements to date. All drugs manufactured in or entering California must have ePedigrees–paper pedigrees will not be considered acceptable. The law will require pharmaceutical manufacturers to create unique identifiers for products, track each product's pedigree, and maintain electronic supply chain records.

"California is the first state to require that pedigrees be electronic," says Jeff Durand, vice president of professional services for SupplyScape, a Woburn,

Improving Compliance, Collaboration and Security

Bio/pharma companies, retail pharmacy chains, 3PLs, specialty wholesalers, repackagers, and medical device kitters comprise the core users of SupplyScape's *Product Security ePedigree* (*PS-ePedigree*). The solution meets the requirements of states with current pedigree regulations, as well as the requirements of the FDA Prescription Drug Marketing Act (PDMA).

One *PS-ePedigree* user, Associated Pharmacies Inc. (API), Scottsboro, Ala., operates as a buying cooperative for more than 1,000 independent pharmacies in 40 states. It provides pharmacy owners with the buying volume leverage to reduce costs for brand and generic prescription drugs, and over-the-counter products.

SupplyScape's *PS-ePedigree* solution helps users comply with pharma supply chain pedigree regulations.

"Our initial interest in e-pedigrees began when Florida required pedigrees on all products not purchased direct from the manufacturer," explains Clint King, vice president and general manager of API. "We realized that in order to offer pedigree information outbound, we had to know who provided which products on our shelves. We also had to know the lot number, delivery dates, and other information.

"We implemented a new ERP system, then began paperless picking, which let us track incoming and outgoing lots electronically," he adds. Because the company had no programmers on staff, it wanted a solution it could implement quickly with no major impact on its operation.

In April 2007, API implemented SupplyScape's *e-Pedigree* data management solution to improve regulatory compliance, supply chain security, and trading partner collaboration. "We didn't have to install any hardware in-house," states King. "SupplyScape provides an online, off-site server that is redundant and backed up properly. All we had to do was get our data fields populated and loaded into SupplyScape's server. That allowed us to provide pedigrees to our distributors and pharmacies."

API went from project startup through testing with suppliers, Web portal setup, and live pedigree processing in two months.

The company's server serializes cases for putaway. The receiving clerk matches the product with its purchase order, then applies a putaway label on the case. This internal serial number stays on the case throughout its stint in the warehouse.

"Then, when we pull the product, we scan that serial number, and tie it back to the original purchase order, along with the lot number, expiration date, and date received," reports King.

API uses its ePedigree technology in conjunction with case-level serialization to improve supply chain security and visibility. As a result of serialization at both inbound receipt and outbound sales pick, the company knows the location of the physical drug product for any pedigree in its system.

The ability to exchange pedigrees electronically makes it easier for upstream trading partners to do business with API, and enhances downstream pharmacy trust in API and its products.

"Another benefit is that it makes recalls easier to track," notes King. "We can drill down into our system and determine the pharmacies that received specific lot numbers."

Most pharmacies API sells to don't have the software to accept electronic pedigrees, so they need paper pedigrees. "SupplyScape gave our pharmacies an online tool so that, in the event the pharmacy was being audited, it could log into the Web site and retrieve any requested pedigree for any item," King says.

API would like to see pedigree requirements simplified. "We hope for a national guideline to alleviate the confusion of complying with different state regulations," says King.


SOLUTIONS
YOU CAN TRUST

CONTINUED FROM PAGE 246

Mass., vendor of ePedigree technology.

One problem with paper pedigrees, which are currently allowed in all states, is that they're fairly easy to counterfeit. With the volume of drugs wending their way through the supply chain every day, it's difficult for trading partners to ensure pedigree compliance requirements using paper documentation.

Electronic pedigrees secure the pharma supply chain by authenticating the drugs every time they change hands. And because secure third-party Web sites – usually the ePedigree vendor's site – host the certificates, they're safe from counterfeiting.

Independently hosted ePedigree software registers the drug, usually at the case or pallet level, either through bar-coding, serialization, or RFID. The technology allows users to verify, through the chain of custody, who else has held the drug.

SPEAKING THE SAME LANGUAGE

It takes cooperation among pharma manufacturers, distributors, and retailers to make ePedigree technology work. EPCglobal, an organization specializing in the development of industry-driven standards to support the use of RFID, stepped up to the challenge by creating a standard that enables and facilitates collaboration among pharma supply chain partners.

In January 2007, EPCglobal's board of directors ratified the organization's Drug Pedigree Standard, which defines a common format that supply chain partners can use to collect electronic pedigree information. The standard includes instructions for creating electric pedigrees, adding information to them, and collecting legally binding signatures digitally. It also describes how companies can send and receive data. Six ePedigree technology vendors helped write and test the standard, and they all base their current ePedigree offerings on it.

EPCglobal's standard ensures industry interoperability. The certified software of one ePedigree vendor can exchange information with the certified software of another ePedigree vendor, allowing supply chain partners to use certified software from different vendors.

EPCglobal then began transforming the new conformance requirements into a certification program that enables ePedigree solution vendors to submit their products for compliance testing. In mid-2007, EPCglobal certified three software solutions – Axway's *Synchrony ePedigree*, rfXcel's *Active ePedigree Management*, and SupplyScape's *E-Pedigree* data management solution. To date, these are still the only three vendors certified by EPCglobal.

EPCglobal also plans to develop a track-and-trace platform standard for the pharmaceutical industry that would use EPC RFID tags to monitor the movement of drugs through the supply chain.

CHAIN OF CUSTODY

As a drug moves from the manufacturer through the supply chain, each company adds to the pedigree. The seller identifies the drugs and the full chain of custody, then certifies the pedigrees and transmits them in advance. The trading partner receiving the drugs authenticates the pedigrees. When the shipment

Harvard Makes a Smart Choice

Axway Corporation's *Synchrony ePedigree* technology, which won the 2007 HDMA iBusiness Solution Award, allows users to enhance operational efficiency by linking physical inventory movements with B2B transactions such as purchase orders, ship notices, and invoices. This linkage provides greater visibility into the supply chain.

Harvard Drug Group, Livonia, Mich., which maintains eight locations throughout the United States, selected Axway technology in mid-2005 and went live with it one year later.

"It wasn't difficult to integrate with our existing technology, especially because the communication was through XML," reports Dan Alcock, systems analyst. "Of course, we had to make some changes to our warehouse management system so it could provide the pedigree information that we needed to store and transmit." Harvard made sure the WMS created and sent the XML files in the proper format, then tested the Axway technology to make sure it processed the information correctly.

"The only products we receive that require inbound pedigrees are those not coming directly from manufacturers," notes Alcock. "In most cases, we still receive paper pedigrees from these companies." On the outbound side, though, Harvard's customers are typically other distributors, and it transmit pedigrees to most of these customers electronically. "They also use Axway," he states.

One early benefit of the technology, according to Alcock, is that it allowed the company to continue to do business in Florida. "We also gained some new business because some other distributors were not able to provide pedigrees back then," he adds.

Internally, the technology has provided the company with more visibility into the supply chain, especially with the product that it ships to its customers. "This helps us in two ways," he notes. "First, we have a tighter returns process. Before, a customer could have returned a lot that they hadn't purchased from us. That can't happen now." Second, in the event of a recall, Harvard can quickly identify the customers to which it had shipped lots.

ePedigree technology not only prepares the company for increasingly stringent governmental regulations, but also pays off in terms of improved efficiency, both internally and with supply chain partners.

arrives, the pedigrees are matched to the products and signed, verifying their accuracy. The pedigree software maintains the product-to-pedigree match while the products are in inventory.

"As an example, suppose there are 100 cases on a pallet," says Durand. "A manufacturer can create a pedigree for the entire pallet, or at the case level, or even at the unit level." The distributor can then send individual units to pharmacy customers, with each unit having an individual pedigree.

BENEFITS ABOUND

All the stakeholders in the pharma supply chain derive benefits from ePedigrees. Manufacturers establish a secure product before it enters the supply chain, wholesalers enjoy efficient operational support, and retailers receive products with automatic pedigree authentication.

The role 3PLs and carriers play in pharma supply chain pedigree requirements vary. "Most companies use FedEx, UPS, DHL, and other expedited providers," Darvey explains. "These carriers are exempt from pedigree requirements because they don't store or warehouse the products."

The involvement of 3PLs, however, depends on state law and whether they are considered an agent of the manufacturer. "Under federal law, manufacturers and their authorized distributors of record do not have to pass pedigrees," she says. "Most manufacturers designate their 3PLs as ADRs."

As such, these 3PLs are exempt from PDMA requirements. More stringent state laws, however, may require their involvement to some extent.

3PLS JUMP IN

Some drug manufacturers and 3PLs utilize ePedigree technology to facilitate supply chain performance, even if it isn't legally required.

"Many manufacturers utilize 3PLs as their distribution centers," Durand says. "In fact, some 3PL customers use our electronic pedigree technology. Our manufacturer customers send their products and provide the pedigree information to those 3PLs, who update it when possession and location change."

Drug pedigree data provides valuable information and protection for every business linked to the pharmaceutical supply chain. ePedigree technology saves time, enhances security, and fosters trading partner cooperation, making tough, new pharma supply chain requirements easier to swallow. ■

L.I.T. TOOLKIT

by Merrill Douglas

The Educated Pallet: How Sweet It Is

Imperial Sugar spices up its supply chain by leasing pallets with the smarts to tell where they've been and where they're headed.

Like the man who sidled up to Dustin Hoffman in *The Graduate*, the folks at Intelligent Global Pooling Systems (iGPS) have one word of advice for you: "Plastics." The Orlando, Fla.-based company claims that the plastic pallets it leases to shippers are lighter and more durable, reliable, and environmentally friendly than similar equipment made of wood.

Imperial Sugar had the virtues of plastic in mind when it signed on as an iGPS customer last fall. But the pallets also delivered a bonus: Each one comes equipped with four radio frequency identification (RFID) tags. Imperial Sugar is experimenting to determine how it can use this technology to better manage its supply chain.

"We've installed readers in several locations, and continue to move in that direction," says Greig DeBow, vice president of consumer sales and marketing at Imperial.

Based in Sugar Land, Texas, Imperial Sugar makes products under the Imperial Pure Cane Sugar, Dixie Crystals, and Holly labels. It operates refineries in Gramercy, La., and Savannah, Ga., and leases warehouses in Houston, Texas; Kenner, La.; and Garden City, Ga. Those facilities ship packaged sugar primarily to retailers in Texas, Alabama, Florida, Georgia, and the Carolinas, as well as railcar loads to industrial customers across the United States.

RIPPING INTO WOOD PALLETS

When they decided to lease pallets from iGPS, Imperial Sugar officials weren't thinking about tracking their goods. They were thinking about how wooden pallets of varying sizes – booby-trapped with splinters and loose nails – can rip sugar bags and jam palletizing machines.

"The U.S. wooden pallet pool totals approximately 2.5 billion," DeBow says. Because wood pallets splinter over time, they constantly require repairs and replacement.

"And the quality has diminished in

CONTINUED FROM PAGE 251

ONE OF A KIND: iGPS embeds each plastic pallet it builds with an RFID tag that contains a unique serial number, allowing the company to track each pallet's complete cycle.

recent years because the manufacturers that sell these wooden pallets are trying to keep costs down," he adds.

iGPS entered the pallet pooling market in 2006 with a two-pronged proposition. First, the company would create a fleet made up entirely of plastic pallets, each the same size and weight. Plastic pallets are 30 percent lighter than equivalent wood pallets. They are more durable, easier to sanitize, and kinder to the environment than wood pallets, as well as being fire-retardant and moisture-resistant, the company says.

Second, iGPS would embed RFID tags in each pallet, making them trackable.

A CHEP OFF THE OLD BLOCK

iGPS isn't the first pallet pooler to employ RFID. Several of the company's executives previously worked at CHEP, a pooling firm that started putting RFID tags on shipping conveyances in 2001. CHEP's primary goal was to manage its own supply chain, keeping track of pallets as they moved from its facilities to customers and back again. iGPS has a similar motive for tagging pallets.

"We know their history – where they are and where they've been," says Jack Sparn, chief information officer at iGPS. "We can monitor their use and accurately invoice a retailer or customer for exactly the time they have the pallet."

In other words, RFID offers a way to meter the use of each pallet in a pool of billions.

Customers can use the pallet-tracking data to monitor the progress of their palletized goods. In addition to pinpointing the location of a pallet, shippers can track their cargo in more detail by installing RFID readers at additional locations. Few iGPS customers have done so, but they will someday, Sparn says. "Shippers will want to know where their cargo has been, how it got there, who touched it–even the temperature during transit," he predicts.

When iGPS builds a pallet, it welds a passive RFID tag encoded with a Graphic Reusable Asset Identifier (GRAI)–a unique serial number–in each corner of the base. The four identical pallet tags provide redundancy. Each side of the pallet also contains a printed label, which represents the GRAI as a bar code and a human-readable serial number.

As the company releases a pallet to a shipper, a reader in the iGPS facility captures the GRAI, along with the date, time, and code representing the destination. Upon receipt of the pallet, the shipper also captures the GRAI, date, and time, and marries that data in an internal computer system with another code that uniquely identifies the product loaded on the pallet.

DATA TIMES TWO

Through an Internet link, iGPS imports this information to its own database. Now iGPS has two pieces of information about the pallet it sent to a customer–Imperial Sugar, for example. "The first is that we shipped the pallet to Imperial," Sparn says. "The second is that Imperial shipped the loaded pallet to a grocery store.

"The grocery store receives the pallet, offloads the sugar, and sends that pallet back to us, or to our depot," he says. "In some instances, we pick it up from them."

When the pallet returns to iGPS, another reader captures the GRAI. "When the cycle is complete, we stop charging rent on that pallet and give credit to Imperial for returning the asset," Sparn says.

Most iGPS customers have installed RFID equipment so they can participate in this process. iGPS installs, manages, and maintains the antennas and readers and the portals that hold them.

Although Imperial Sugar is testing some RFID equipment, it has not yet made the technology part of its operation. "We're in the infant stages," DeBow says.

In the meantime, Imperial uses its own bar-code readers to scan the pallets as they enter and leave a facility. At companies operating without bar-code equipment, employees jot down the serial numbers.

ACCURATE AND PRECISE

For iGPS's own operations, the primary advantages of tracking pallets via RFID are accuracy and precision. "We're able to know not only the exact quantity but also the specific units that we ship to a customer such as Imperial," Sparn says.

The company also can bill the customer for the exact number of days a pallet is held, which is a benefit to both parties. "We don't bill based on averages or assumptions," Sparn notes. "We create invoices using specific data for each pallet."

Also, pallets with tags are less likely to get lost. If one does go astray, iGPS knows which customer to credit for the return when it resurfaces.

For a food manufacturer such as Imperial, the fact that iGPS tracks and traces its pallets also offers an extra measure of quality assurance. "Each pallet has its own identifier, and the products shipped on those pallets are registered under that identifier," DeBow explains. "So you can see whether or not a raw meat product, for example, has ever been shipped on a particular pallet."

Eventually, the tagged pallets could help Imperial better manage its inventory, DeBow notes, although he isn't sure what the future holds for the use of RFID in retail distribution. "We'll sit back and see if it works for Wal-Mart in the long term," he says.

Sparn is more sanguine. He predicts a time when pallets will sport not only tags, but in some cases global positioning system (GPS) receivers to track their locations in real time, and sensors that record when a load is dropped, frozen, or over-heated.

Just as cell phones didn't hit big in the market until carriers built out their networks, RFID tags won't become ubiquitous until a network of readers covers the entire country.

"The biggest challenge is spreading RFID everywhere," Sparn says. ■

by Amanda Loudin

High-Speed Sortation Picks Up The Pace

ATS's new cross-docking facility keeps shipments moving and customers smiling.

While many companies claim that the "customer is king," they sometimes fall short in the delivery. That's not the case for Canada-based Andlauer Transportation Services (ATS), a full-service transportation solutions provider with a business model that keeps customers coming back. In fact, more than 50 percent of customers have been with ATS for at least eight years. ATS maintains that loyalty by running an efficient cross-docking operation dedicated to customer service.

The company moves approximately 3.7 million pounds of freight daily and has posted double-digit growth annually since its inception 16 years ago. Its customers vary widely, often by region. In Montreal and Toronto, for instance, ATS focuses on the health care, cosmetics, and retail industries.

To meet demanding delivery schedules, ATS has mastered the art of moving large volumes of freight quickly using a state-of-the-art cross-docking strategy. It also continuously evaluates and updates its facilities and technology. To that end, ATS recently expanded and upgraded its cross-docking facility in Montreal.

ATS operates 23 cross-docking facilities throughout Canada. When it became clear that the Montreal facility needed more infrastructure to keep up with growing freight volumes, the company made plans for a new facility that, at 125,000 square feet, is roughly double the size of the old one.

The Montreal facility is designed to meet the needs of pharmaceutical, entertainment, and retail industry customers. In fact, the facility ships 100 percent of Canada's DVDs from studios to stores.

ATS YOUR SERVICE

True to its dedication to customer service, ATS was adamant that this new facility feature equipment that would allow it to keep up with a variety of demands–the facility had to be temperature controlled, for example, to service pharmaceutical customers.

ATS realized it would achieve maximum results by investing in the most

DCSOLUTIONS

CONTINUED FROM PAGE 255

up-to-date materials handling technology. After undergoing a bidding process to zero in on the right technology provider, the company selected FKI Logistex, a systems integrator based in St. Louis.

"FKI has been our principal conveyor supplier over the years, so we were already familiar with it," says Mike Beard, director of marketing for ATS. "FKI also offered a solution that best met our needs, so we selected it for the cross-docking project."

Working together, ATS and FKI designed the new facility to successfully flow through products at a rapid pace. A variety of integrated equipment facilitates the new layout and processes (*see sidebar below*).

As pallets arrive at the loading docks, forklifts and pump trucks move them to staging areas. ATS workers then take the packages off the pallets and set them onto one of three FKI belt conveyors, where they travel to the facility's upper platform.

MAN YOUR STATIONS

The three belt conveyors merge into two lines of an accumulation roller conveyor, which directs the packages through weighing, cubing, and bar-code scanning stations. A recirculation line coming back from the sorter joins the other two lines and the three merge into a single line, which pushes the packages through a scanner on the lower level. By communicating with the cubing system, the scanner directs the sorter to send packages to the correct destination line.

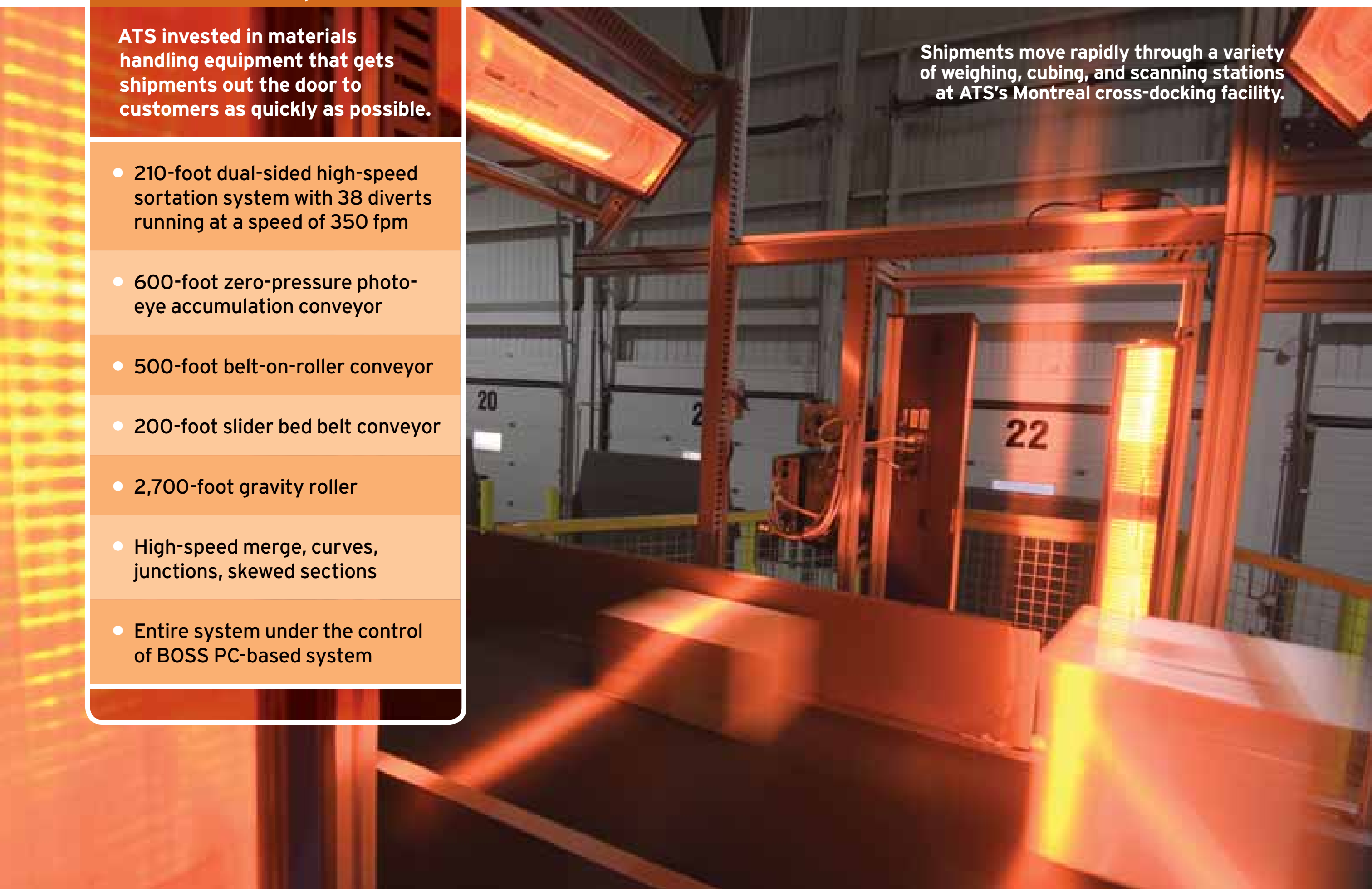
At the center of the operations sits FKI's BOSS PC-based control system, which is integrated with ATS's information systems. ATS's delivery information system also integrates with customers' shipping software so that most parcels arrive affixed with ATS bar-code labels.

A sliding shoe sorter then sends the packages to one of 38 destination lanes with an extra line for recirculation. Each shipping method for each destination is assigned to its own lane. Any parcel that cannot be sorted properly on the first pass is recirculated.

Built for Speed

ATS invested in materials handling equipment that gets shipments out the door to customers as quickly as possible.

- 210-foot dual-sided high-speed sortation system with 38 diverts running at a speed of 350 fpm
- 600-foot zero-pressure photo-eye accumulation conveyor
- 500-foot belt-on-roller conveyor
- 200-foot slider bed belt conveyor
- 2,700-foot gravity roller
- High-speed merge, curves, junctions, skewed sections
- Entire system under the control of BOSS PC-based system



Shipments move rapidly through a variety of weighing, cubing, and scanning stations at ATS's Montreal cross-docking facility.

Of the 38 lanes, 36 are gravity-roller conveyors and two are powered-belt conveyors. As the gravity-roller conveyors feed staging areas for hand-palletization and shrink-wrap, the powered-belt conveyors feed high-volume deliveries to specific dock doors.

Before moving into the new facility and installing the new equipment, ATS and FKI conducted extensive testing.

"We built this facility with the capacity for growth in mind," says Beard. "By doing upfront work and by having enough capacity to manage the move, it only took about 18 months from design to move-in."

The new facility has provided ATS with two major benefits, according to Beard. "One, we've been able to reduce our sort window significantly, which has led to shorter work shifts and a decrease in labor," he explains. "Two, we've reduced mis-sorts 25 percent by shifting from manual to automated operations."

ATS's operations were a perfect fit for FKI's products, according to Arnold Cunje, FKI's national accounts manager. "ATS has been growing at such a rapid pace that we designed the facility not only to meet its needs today, but also for the future," he says. "The company can add more inbound or outbound lanes as needed, which provides a great deal of flexibility."

So successful was the Montreal implementation that ATS opened a replica facility in Vancouver. The company hopes to achieve the same productivity results in this facility, along with a similar return on investment.

In Toronto, the company opened a facility that uses technology similar to the Montreal system but is twice the size. ATS plans to bring the same technology to most of its other facilities across Canada.

The company intends to continue maintaining its high level of customer service as it grows, and doesn't anticipate the need to add labor.

"ATS appreciates what technology can do," says Cunje. "Our long-term partnership helped bring this project together, and now ATS can grow into the future."

Beard agrees that the partnership with FKI has been key to the success of ATS's new facilities.

"Companies in growth mode, such as ATS, need to align with a good systems integrator and builder," he says. "The devil is in the details, and you need to depend on a partner who will successfully work with you through the implementation process." ■

NEWSERVICES

YOUR BUSINESS LOGISTICS RESOURCE

Kalmar Industries

WHAT'S NEW: The launch of an enhanced empty container handler (ECH).

THE VALUE: The DCF 80-100 series ECH was designed for optimum performance and improved total cost of ownership savings. The machine, available with either a hook or twistlock attachment, offers lifting speeds that are 10 percent faster than average, extended service intervals of 500 hours, and Tier 3 engines that comply with strict noise and vibration standards.

www.kalmarind.com
609-860-0224

Old Dominion Freight Line

WHAT'S NEW: The opening of a new Pacific Northwest service center.

THE VALUE: The 20-door facility located on two acres in Eugene, Ore., improves Old Dominion's coverage in the Salem, Eugene, Corvallis, and Springfield areas.

www.odfl.com 800-432-6335

Antillean Marine Shipping Corp.

WHAT'S NEW: The expansion of services to Port Everglades.

THE VALUE: The move enables the marine cargo company, formerly based on the Miami River, to handle increased cargo volumes and trans-shipment opportunities with other carriers. Antillean will bring more than 60,000 containers to the South Florida seaport annually, according to estimates.

www.antillean.com 888-633-6361

AirNet Systems

WHAT'S NEW: The expansion of Friday night flight services.

THE VALUE: AirNet added express flights serving Boston; Hartford, Conn.; New York; Philadelphia; and

CONTINUED FROM PAGE 258

To learn more, contact these companies directly. Remember to mention this issue date and page to get the right information.

Washington, D.C. to its Friday night network, which now includes 14 cities in the East Coast and Midwest regions. With late-night departures, early-morning arrivals, and short transit times, the flights predominantly serve life sciences and laboratory shippers who require enhanced control and time-definite delivery.

www.airnet.com ✆ 614-409-4900

Labelmaster

WHAT'S NEW: The release of a revised Emergency Response Guidebook (ERG).

THE VALUE: Last updated in 2004, Labelmaster's ERG provides emergency response plans and incident management systems, supplying first responders with a standardized approach to incidents involving hazardous materials. The guide, available in spiral bound, soft bound, and pocket size, was developed by the U.S. Department of Transportation, Transport Canada, and the Secretariat of Communications and Transportation of Mexico, with collaboration from Centro de Informacion Quimica para Emergencias of Argentina.

www.labelmaster.com ✆ 800-621-5808

Ozburn-Hessey Logistics

WHAT'S NEW: The addition of an international services station.

THE VALUE: Located in OH Logistics' 75,000-square-foot Atlanta, Ga., facilities, the new station offers international services such as customs brokerage and freight forwarding via air and ocean.

www.ohlogistics.com ✆ 877-401-6400

RackDeflektor

WHAT'S NEW: The introduction of molded protective bumpers for pallet racks.

THE VALUE: Attached to pallet rack uprights using serrated clips, the Rack Deflector minimizes forklift collision damage. A bright yellow outer shell alerts equipment operators to their location, while a rubber insert shock absorber protects racking frames, vehicles, and operators in the event of impact.

www.rackdeflektor.com ✆ 630-209-9772

Institute of Supply Management

WHAT'S NEW: The development of a tool to analyze a supply management team's skills.

THE VALUE: Employees rate their skills using a questionnaire. The tool, SMART, compiles the results into a report outlining training and development strategies for a company's specific supply chain needs.

www.ism.ws ✆ 800-888-6276

Balke Brown Associates

WHAT'S NEW: The opening of a downtown St. Louis distribution center.

THE VALUE: With 420,000 square feet of storage space on 20 acres, the North Broadway Distribution Center, owned by real estate developer Balke Brown Associates of St. Louis, ranks among the largest distribution facilities in the city. Twenty-nine percent of the speculative warehouse has been leased, with Fenton, Mo.-based distributor International Food Products Corp. occupying 120,000 square feet.

www.balkebrown.com ✆ 314-621-1414

Dayton Freight Lines

WHAT'S NEW: The introduction of an on-time delivery guarantee program.

THE VALUE: The Ohio-based LTL carrier's On the Double: Guaranteed program gives shippers the

Logistics challenges causing you headaches?
Take two and call LynnCo for your free logistics health assessment, today.
LYNNCO
SUPPLY CHAIN SOLUTIONS
Drug Facts:
Active Ingredients:
Continuous Improvement, Dedicated Account Team, Best-in-class practices, SuiteEdge℠ Visibility Tools
Warnings:
Side effects of using LYNNCO:
Improved visibility of logistics activities
30%+ Inventory cost reductions
30%+ Transportation savings
Shortened order to delivery cycle time
Disciplined logistics control
Improved order fill rates
Consistent on-time delivery
For Treatment of:
Short ships
Late deliveries
Excessive inventory
Excessive expediting expense
Lack of supply chain visibility
Lack of logistics control
"At LynnCo every client is treated as our only client."
Wendy Buxton, President
LYNNCO
SUPPLY CHAIN SOLUTIONS
2448 East 81st Street • Suite 2600 • Tulsa, OK • 74137
866.872.3264
www.lynnco-scs.com
headacherelief@lynnco-scs.com

CONTINUED FROM PAGE 260

To learn more, contact these companies directly. Remember to mention this issue date and page to get the right information.

Raymond Corporation

WHAT'S NEW: The introduction of a sit-down electric lift truck.

THE VALUE: Able to lift capacities up to 4,000 pounds, the low-profile Model 4400 is designed with a tight turn radius to move easily through tight spaces and can be fitted with attachments to handle cartons, paper rolls, and slipsheets.

www.raymondcorp.com
607-656-2311

opportunity to specify when they want their freight delivered–either by noon or 5 p.m.–and promises that if the deadline isn't met, the service is free.

www.daytonfreight.com 800-860-5102

Meese Orbitron Dunne Co.

WHAT'S NEW: The introduction of bulk containers matching the pallet size common in Asia.

THE VALUE: The Ship Shape bulk containers' 44-inch by 44-inch footprint allows North American exporters to ship palletless loads to Asia, reducing transfer time. Available in a variety of colors and options, the containers, which nest when empty and stack when covered, hold up to 700 pounds of dry product.

www.modroto.com 800-772-7659

Southeastern Freight Line

WHAT'S NEW: The opening of a service center in Wichita Falls, Texas.

THE VALUE: The 16-door facility, which opened with five pick-up and delivery drivers, one linehaul driver, and one combo driver, allows Southeastern to enhance the service already provided to its Texas customers.

www.sefl.com 800-637-7335

Rinchem Company

WHAT'S NEW: The addition of 110,000 square feet of warehouse space.

THE VALUE: Located within 50 miles of the company's largest customers, the Flemington, N.J., facility enhances the services that the provider of chemical and gas management solutions offers. Retrofitting construction brings the space into compliance with chemical, bio-tech/pharmaceutical, and food-grade storage safety requirements.

www.rinchem.com 505-345-3655

Evergreen Line

WHAT'S NEW: The beginning of a weekly Asia-East Mediterranean (AEM) service.

THE VALUE: Seven vessels make the 49-day rotation, calling on ports in Shanghai, Ningbo, Nansha, Hong Kong, Tanjung Pelepas, Haifa-Limassol, Piraeus, and Istanbul. Evergreen Line, which operates the fourth-largest container fleet in the world, comprising more than 150 ships with a capacity of approximately 560,000 TEUs, also uses the AEM service to connect with feeders serving other ports in the East Mediterranean and Black Sea.

www.evergreen-line.com 201-761-3000

Nippon Express, Kintetsu World Express, All Nippon Airways

WHAT'S NEW: The establishment of a joint venture for international express delivery services in Asia.

THE VALUE: The partnership of Tokyo-based logistics companies Nippon Express and Kintetsu World Express and airline All Nippon Airways provides integrated distribution services to support the supply chains of businesses with rapidly expanding production bases.

www.nipponexpress.com
www.kwe.com
www.anaskyweb.com

Universal Boot

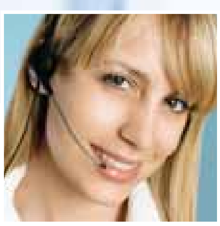
WHAT'S NEW: The development of a lightweight trailer anti-theft device.

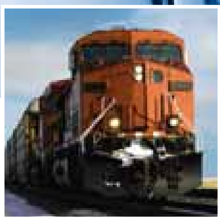
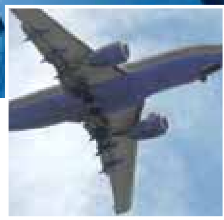
THE VALUE: Weighing less than seven pounds, the PF-09, a conical king pin lock, needs neither tools nor the lock key for installation. Universal Boot offers its own proprietary lock but the unit is fully compatible with cylinders from other lock manufacturers,

If selecting the best transportation 3PL is *puzzling* to you— PDI can provide the perfect fit.

"What is it like to partner with Priority Distribution? It means having a trusted business partner who thoroughly knows our business, enabling us to provide superior logistics services to our customers."

Director of Corporate Transportation
Leviton Manufacturing Co.



Providing Transportation Management VALUE is our Priority

- Logistics Outsourcing
- Transportation Management
- **PDI EDGE** Technology
- Load Control Center
- Optimization
- Pool Distribution
- Multi-Modal Solutions
- Logistics/Transportation
- Freight Brokerage Services

PDI is a full-service transportation and supply chain solutions provider. Our experienced, professional staff has the capability to reduce transit time and overall shipping cost. We provide a variety of solutions ranging from tactical to strategic. Our tactical solutions include Truckload, Less-than-Truckload, Pool Distribution, Intermodal, and Air. When shippers require long-term strategic solutions we will develop customized solutions based on their unique needs.

As a **3PL provider** our first priority is making sure that your freight is picked up and delivered when it should. We are not content with merely knowing it is in transit – we strive to ensure that it is safe, undamaged, and will move on time. Similarly our experienced staff can help you track and trace all of your shipments, and you will never hear the phrase: "We can't do that." This is the PDI difference.

330 Milltown Road,
Suite C31
East Brunswick, NJ 08816
Phone: 732-234-1919
Fax: 732-234-1926
solutions@pdi3pl.com
www.pdi3pl.com

PDI
PRIORITY DISTRIBUTION INC.

1987 20 2007
YEARS

TIA

NEWSERVICES

CONTINUED FROM PAGE 262

To learn more, contact these companies directly. Remember to mention this issue date and page to get the right information.

allowing shippers to purchase the conical shell and adapt their own key systems for use with the PF-09.

www.universalboot.com ✆ 888-354-5699

Global Link Logistics

WHAT'S NEW: The expansion of its trans-Pacific express service to cover Midwestern markets.

THE VALUE: The company's FLEX (Furniture Less than Container Express) service allows retailers and importers in Minnesota, Nebraska, North Dakota, South Dakota, and Wisconsin to consolidate orders as small as 300 cubic feet from multiple Asian factories and ship direct to North American retailers, providing the cost benefits of a direct container shipment without the cost and inventory impact.

www.globallinklogistics.com ✆ 770-938-2656

Watco Companies

WHAT'S NEW: The acquisition of Reload Inc.

THE VALUE: Reload, a transloading and warehousing company specializing in rail service, provides Kansas-based railroad operator Watco the ability to offer shippers more rail options and the opportunity to expand their markets.

www.watcocompanies.com ✆ 620-231-2230

Spirit Air Cargo Handling

WHAT'S NEW: The opening of an air cargo terminal in Stockholm, Sweden.

THE VALUE: The modern 15,000-square-meter terminal doubles the SAS Cargo subsidiary's capacity in Cargo City at Arlanda Airport. The expansion, which benefits the

Port Manatee

WHAT'S NEW: The purchase of the port's first container crane.

THE VALUE: The $3.9-million piece of equipment, which weighs more than 460 tons and can lift 100 tons, allows the port, located near the entrance to Florida's Tampa Bay, to increase container handling. Currently, the port processes a modest number of containers, but port officials estimate that the new crane will enable the port to move as many as 600,000 containers a year.

www.portmanatee.com ✆ 941-722-6621

CONTINUED FROM PAGE 264

To learn more, contact these companies directly. Remember to mention this issue date and page to get the right information.

increasing number of all-cargo aircrafts, resulted from an agreement between Spirit Air Cargo Handling and Nordic Airport Properties.

www.spiritaircargohandling.com

UPS

WHAT'S NEW: The launch of a joint venture with Staples in China.

THE VALUE: Co-branded Staples UPS Express stores, the first of which opened in Beijing, combine office supplies and document-processing services with packaging and international shipping services, offering Chinese businesses convenient access to a range of products and services.

www.ups.com ✆ 800-742-5877

Weber Distribution

WHAT'S NEW: The opening of a new hub facility in Seattle, Wash.

THE VALUE: The warehouse serves as a cross-docking and storage facility, providing local and West Coast LTL and full truckload service to and from the Pacific Northwest. Weber, an 83-year-old logistics and supply chain management provider based in Los Angeles, Calif., specializes in vertical markets.

www.weberdistribution.com

✆ 877-624-2700

FedEx

WHAT'S NEW: The enhancement of FedEx Custom Critical's and FedEx Express' temperature-controlled shipping services.

THE VALUE: Using compressor technology instead of dry ice keeps the inside of the container at the desired shipping temperature. The container's battery can last for more than 100 hours and can be plugged in for easy recharging throughout the life of the shipment.

www.fedex.com ✆ 866-274-6117

Industrial Terminals

WHAT'S NEW: The addition of expedited delivery lanes.

THE VALUE: Using a delivery system from offshore IT services provider ITEX, the Houston, Texas, cargo terminal can receive, certify, and process shipment documentation for approved shippers in advance, allowing trucks to proceed directly to the cargo laydown yard, reducing congestion and providing faster service.

www.intermarineusa.com ✆ 800-229-8701

Mediterranean Shipping Company

WHAT'S NEW: The introduction of service between the Port of Philadelphia and major ports on the West Coast of South America.

THE VALUE: The outbound/exporting component of this new service includes port calls in Philadelphia; Freeport, Bahamas; Cartagena, Colombia; Callao, Peru; Valparaiso, Chile; and San Vicente, Chile. The inbound/importing component of the service includes ship calls in Valparaiso; San Vicente; Freeport; and Philadelphia.

www.mscgva.com

AFN®

THE BEST WAY EVERY DAY®

How do we do it? AFN's Goal is to provide our Customers with a competitive advantage in moving their freight by matching their transportation needs with the many niche services of our select Carrier Partners. Daily buying and selling of capacity with special care given to each shipment ensures that every load ships The Best Way Everyday®.

AFN is a non-asset-based provider of logistics and transportation services throughout North America. Our focus is on full truckload and less than truckload brokerage and logistics services. AFN aggressively matches your needs with the many niche services of our select Carrier partners.

On average, ten percent of the cost of goods sold in the US is directly attributable to the transportation and warehousing of product. AFN will move your toughest load, manage your entire logistics department, or provide you with any level of service in between so you can optimize the value of your logistics spend.

Whether you are looking to expedite a single piece of freight cross-country, set up dedicated routes, want to move your truckloads without the hassle of making 20 calls, or need assistance optimizing and managing your entire logistics network, we're the logistics provider for you.

Start moving your freight The Best Way Every Day.®
Call AFN now at 866-7MOVE-IT for our credentials.

Advantage Freight Network, LLC. • 1435 Lake Cook Road • Deerfield, IL 60015
Toll Free: 866-766-8348 • 847-498-8885 • Fax: 847-498-5575 • **mnervick@afnww.com**

CONTINUED FROM PAGE 266

To learn more, contact these companies directly. Remember to mention this issue date and page to get the right information.

SAS Cargo

WHAT'S NEW: The expansion of service into Vietnam.
THE VALUE: The Denmark-based company's presence in Vietnam means shorter lead times for air cargo between Vietnam and Scandinavia.

www.sascargo.com

APS Resource

WHAT'S NEW: The introduction of an aftermarket dock light.
THE VALUE: An extra-long, 39-inch stainless steel flexible arm and 60-watt halogen bulb help the FT Ultra Dock Light reach dark corners.

www.apsresource.com ✆ 262-518-1000

Harbor Freight Lines

WHAT'S NEW: The opening of a service terminal in Fontana, Calif.
THE VALUE: The terminal improves transit times for shippers needing direct LTL service to high desert communities such as Adelanto and Apple Valley and low desert communities such as Palm Springs and Beaumont.

www.oakh.com

ZIM

WHAT'S NEW: The launch of a new East-West Express Service (EWX) connecting major north European and Asian ports.
THE VALUE: Israeli liner shipping operator ZIM's weekly EWX service offers shippers short transit times between major North European and Asian ports for refrigerated, over-dimensional, and hazardous cargo.

www.zim.com

LynxUS

WHAT'S NEW: The opening of a warehouse and distribution center in Auburn, Maine.
THE VALUE: Strategically located near local transportation hubs, the new 100,000-square-foot heated facility allows full-service transportation and warehousing company LynxUS to offer food-grade storage space.

www.lynxus.us ✆ 877-596-9871

XTRA Lease

WHAT'S NEW: The addition of new flexibility to trailer tracking service.
THE VALUE: Fleet managers using the transportation leasing company's trailers can group leased trailers and monitor them collectively, increasing visibility.

www.xtralease.com ✆ 800-325-1453

TECHUPDATE

THE LATEST | IN LOGISTICS TECHNOLOGY

SICK

WHAT'S NEW: The launch of an expanded line of handheld bar-code scanners.
THE VALUE: The 3800 linear series boasts durability, ergonomics, and reading performance; the 4000 area imagers series reads most linear and 2D bar codes and creates digital images for electronic signature capture and paperless document processing.

www.sickusa.com
800-325-7425

software

Click Software Technologies

WHAT'S NEW: The release of a new version of *ClickMobile*.
THE VALUE: *ClickMobile* gives technicians the ability to send and receive work-order data such as real-time updates, automatic acknowledgement, customer history, spare parts, work details, completion details, billing process, signature capture, and invoices.

www.clicksoftware.com
888-438-3308

Infor

WHAT'S NEW: The enhancement of an integrated global transportation and trade compliance solution.
THE VALUE: *SCM Transportation Management 9.0* enables carriers and suppliers to use a single system to manage the complete trade management lifecycle. The software allows suppliers to monitor shipment status, and shippers to ensure rates are accurate and goods are shipped as efficiently and economically as possible.

www.infor.com 866-244-5479

ILOG

WHAT'S NEW: The release of a new version of the *LogicNet Plus* network design and planning solution.
THE VALUE: A new simulator automates scenario comparisons, allowing supply chain managers to preview the business impact of changes in their supply chain before deployment.

www.ilog.com 408-991-7000

Catalyst

WHAT'S NEW: The development of an integrated cross-carrier packing and shipping system.
THE VALUE: Designed to increase distribution efficiency for SAP users shipping large volumes of parcels, *XPS* integrates SAP and third-party parcel carriers' systems to deliver visibility and control over all aspects of order fulfillment. The system also generates detailed bar-code labels covering specific customer requests and key information required by shipping companies.

www.catalystinternational.com
800-236-4600

Integration Point

WHAT'S NEW: The introduction of a real-time global trade management (GTM) solution.
THE VALUE: The product, *Real Time GTM*, allows users secure access to information such as free trade agreement rules, customs exception lists, and different countries' tax and compliance requirements.

www.integrationpoint.net
704-576-3678

CONTINUED FROM PAGE 271

To learn more, contact these companies directly. Remember to mention this issue date and page to get the right information.

Next View Software

WHAT'S NEW: The release of facilties software that provides 3-D, real-time visibility.

THE VALUE: *Next View Live* visualizes operations – including details such as inventory positions, forklift operators, and materials handling systems – to analyze storage location usage.

www.nextviewsoftware.com
714-881-5105

Logility

WHAT'S NEW: The improvement of its TMS.

THE VALUE: The Carrier On-Boarding service accelerates the implementation of Logility's *Voyager Transportation Planning and Management* solution, which allows shippers and carriers to collaborate on loads, tenders, bids, shipment status information, and freight payment.

www.logility.com 800-762-5207

TradeStone Software

WHAT'S NEW: The introduction of a quality and social compliance tool.

THE VALUE: *TradeStone Factory Footprint* helps eliminate recalls and ensure product safety by giving retailers visibility into supplier factory operations. This visibility allows them to set up vendor and factory compliance inspections, schedule audits, track product testing results, and access Code of Conduct documentation.

www.tradestonesoftware.com
978-281-3723

Lead Time Technology

WHAT'S NEW: The release of planning and optimization software for small and mid-sized businesses (SMBs).

THE VALUE: With *FastForward*, tools previously too expensive and complex for most SMBs are available for reducing inventory, improving forecast accuracy, and cutting cycle time across the supply chain.

www.leadtimetechnology.com
423-240-0365

Manhattan Associates

WHAT'S NEW: The launch of a labor forecast/optimization application designed for distribution managers.

THE VALUE: When using the *Labor Management Solution*, distribution managers can forecast the number of employees required to perform estimated work.

www.manh.com 770-955-7070

McLeod Software

WHAT'S NEW: The introduction of a new module for its TMS.

THE VALUE: McLeod has enhanced its *LoadMaster* enterprise TMS with a fuel tax module that uses GPS data to produce accurate in-state mileage reports for fuel tax reporting.

www.mcleodsoftware.com 877-362-5363

Interactive Capacity Gateway

WHAT'S NEW: The release of an on-demand shipment management software package.

THE VALUE: Shippers, brokers, and 3PLs can use *Capacity Gateway* to create an online collaborative network to manage their customers' ground shipment activity, including order entry, online procurement, event

CONTINUED FROM PAGE 272

To learn more, contact these companies directly. Remember to mention this issue date and page to get the right information.

Intelligent Devices and Evidencia

WHAT'S NEW: The development of a passive radio-frequency and wireless probed temperature recorder.

THE VALUE: Log-ic ThermProbeRF, an extension to the cold chain management RFID product line that includes the Log-ic Tracker and Log-ic ThermAssureRF, allows users to check and download the time and temperature history of sealed boxes or pallet centers. The device offers custom programming with time and temperature alarm thresholds, all in a compact form (it's as flat as a credit card) that ensures less breakage during stacking and shipment.

www. intelligentdevicesinc.com ✆ 770-831-3370

www.evidencia.biz ✆ 901-529-9163

management, order visibility and tracking, and reporting tools

✆ 248-359-2116

SPS Commerce

WHAT'S NEW: The enhancement of its Electronic Data Interchange (EDI) products.

THE VALUE: Third-party vendors, remote factories, and warehouses can receive packing and shipping instructions online from the supplier, print and affix bar-code labels onsite, and send a shipping notice to the retailer.

www.spscommerce.com ✆ 866-245-8100

Technology Group International

WHAT'S NEW: The release of a specialized ERP solution for pharmaceutical manufacturers and distributors.

THE VALUE: Order management, inventory control, and shipping functions provide pharmaceutical manufacturers with increased lot control, identification, and tracking capabilities.

www.tgiltd.com ✆ 800-837-0028

FastPic Systems

WHAT'S NEW: The expansion of an inventory management software suite.

THE VALUE: *FastPic4* provides real-time inventory status and detailed reports, helps reduce floor space requirements, and extends order cut-off times. Working from a single workstation or from multiple work zones, users can configure the program to handle shelving, rack, pick-to-light, vertical lift modules, and carousel systems. Picking can be interrupted for hot picks and hot counts to meet delivery and customer demands.

www.fastpicsystems.com ✆ 800-897-8379

Zebra Technologies

WHAT'S NEW: The introduction of label design software for use with SAP Business Suite applications.

THE VALUE: *ZebraDesigner* allows users to print bar codes, text, and graphics directly from their SAP Business Suite application.

www.zebra.com ✆ 866-230-9494

partnerships

The Northeast Indiana Regional Partnership, GIS Planning, & Cirrus ABS

WHAT'S NEW: The ability to search for available land and buildings and access business solution information.

THE VALUE: Visitors to the Web site can search based on factors such as demographics, workforce profiles, and spending.

www.chooseneindiana.com

✆ 877-469-3469

CONTINUED FROM PAGE 274

To learn more, contact these companies directly. Remember to mention this issue date and page to get the right information.

GXS Managed Services and BB&T Corporation

WHAT'S NEW: The introduction of an integrated supply chain management service.

THE VALUE: Combining GXS Managed Services' supply chain platform with BB&T's international banking, commercial finance, and payment services functions, the system connects buyers and suppliers around the world on an integrated supply chain finance platform that provides real-time visibility into invoice and payment processes and mirrors activities in the physical supply chain.

www.gxs.com ✆ 800-560-4347
www.bbt.com ✆ 800-226-5228

OATSystems and IBM

WHAT'S NEW: The expansion of RFID solutions into Australia and New Zealand.

THE VALUE: Retailers, consumer products companies, and manufacturers in these countries receive the benefits of end-to-end RFID service in areas such as inventory availability, promotions execution, and asset management.

www.oatsystems.com ✆ 781-907-6100
www.ibm.com ✆ 800-426-4968

hardware

Epic Group Global Technology

WHAT'S NEW: The release of a device for gathering dimensions and weight.

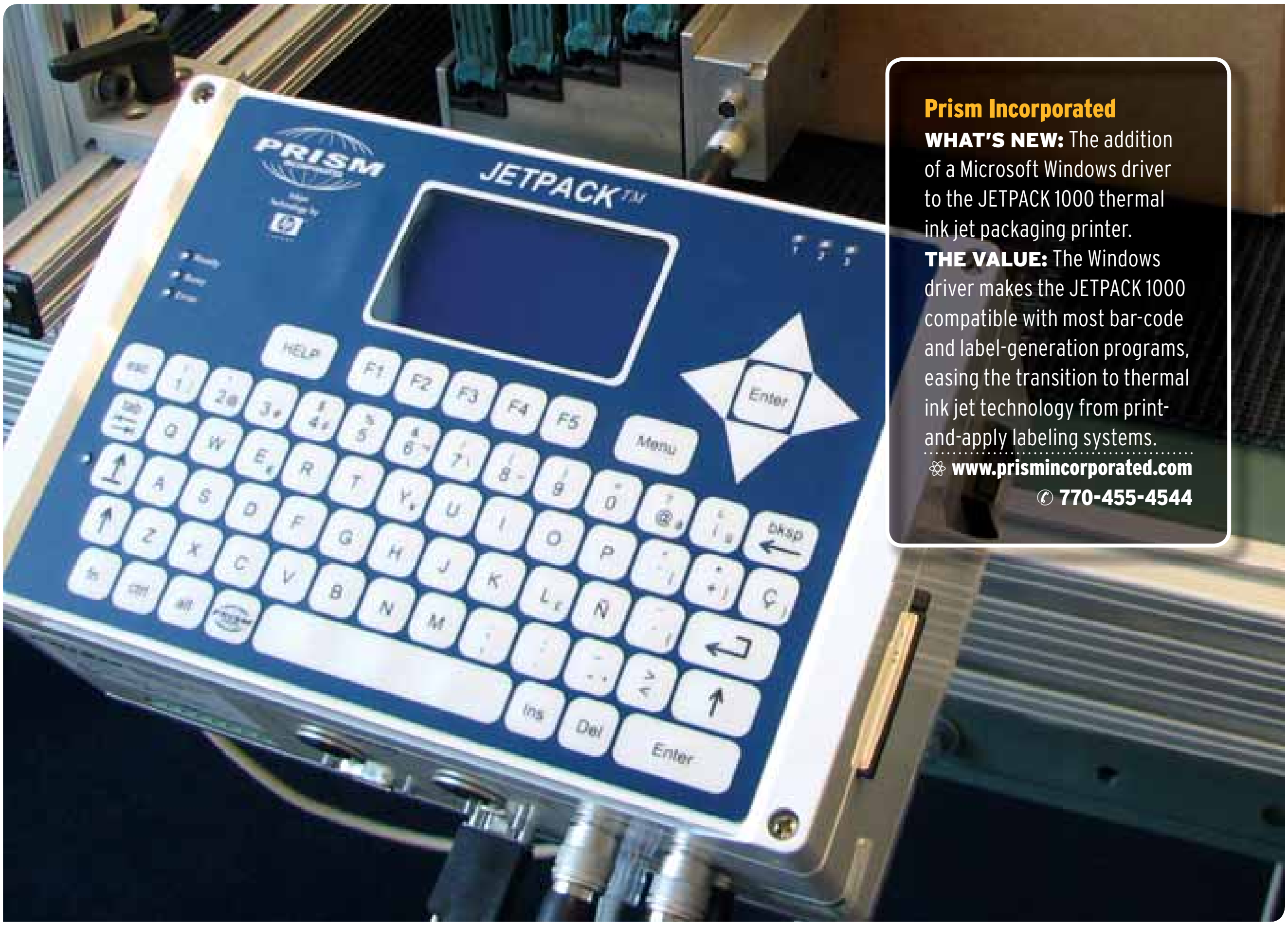
THE VALUE: The Hawkeye Perfect Measure System allows trading partners to verify critical case and item data – such as size and weight – that impact shipping costs. The tool verifies measurements within .005 inch, which makes it suitable for the needs of companies utilizing supply chain management systems in data synchronization and package shipment industries.

www.epicglobaltech.com
✆ 630-587-9988

web

Catapult International

WHAT'S NEW: The introduction of a



Prism Incorporated

WHAT'S NEW: The addition of a Microsoft Windows driver to the JETPACK 1000 thermal ink jet packaging printer.

THE VALUE: The Windows driver makes the JETPACK 1000 compatible with most bar-code and label-generation programs, easing the transition to thermal ink jet technology from print-and-apply labeling systems.

www.prismincorporated.com
✆ 770-455-4544

CONTINUED FROM PAGE 276

To learn more, contact these companies directly. Remember to mention this issue date and page to get the right information.

Web-based quoting and booking system.
THE VALUE: Freight forwarders and NVOCCs can provide price quotes to shippers instantly with a system that hosts contract rates online in a secured format.

www.gocatapult.com 888-338-0170

IAS-Trinium

WHAT'S NEW: The launch of a service that automates trucking dispatch operations.
THE VALUE: DispatchManager creates one connection among ocean carriers, 3PLs, and intermodal truckers, simplifying the dispatch work order process and eliminating inefficiencies.

www.ias-trinium.com
866-698-3630

Labelmaster

WHAT'S NEW: The development of Web-based workplace time and attendance software.
THE VALUE: MasterTime's reporting features, payroll integration, and employee scheduling tasks run on a company's local area network, eliminating the need for card-swiping machines and allowing employees remote access via Web browser.

www.labelmaster.com
800-621-5808

Freightgate

WHAT'S NEW: The release of a customizable desktop utility.
THE VALUE: Used with the Freightgate 2.0 portal, the Personal Logistics Web Desktop allows users to update their desktops with information specific to their jobs, such as conversion tools, shipment tracking, and customized news feeds.

www.freightgate.com 714-799-2833

ShockWatch

WHAT'S NEW: The introduction of a Remote Data Management service.

Psion Teklogix

WHAT'S NEW: The launch of a PDA with data capture capabilities.
THE VALUE: The Ikôn combines wireless voice and data communications with simultaneous WiFi, cellular, and Bluetooth connectivity options, and an integrated imager/scanner allows for bar-code reading. The device can withstand drops from a height of five feet onto concrete and comes equipped with dust and water protection.

www.psionteklogix.com
800-322-3437

THE VALUE: The application provides secure access to information transmitted by ShockWatch's ImpactManager RF and EquipManager wireless equipment monitors, which track the activity of forklifts and other motorized equipment. The service provides real-time reports on maintenance, impacts, and user errors.

www.shockwatch.com 800-527-9497

Oceanschedules.com

WHAT'S NEW: The availability of a customized version of the Oceanschedules.com Web site.
THE VALUE: Oceanschedules.com integrates schedule search with the option to make an electronic booking with multiple carriers. Shippers and forwarders can enhance the Web site's free, searchable ocean container schedules with customized options such as creating an application to integrate Oceanschedules.com into the user's backend system.

www.oceanschedules.com
973-263-5100

Virtual Dispatch

WHAT'S NEW: The introduction of a transportation dispatch system.
THE VALUE: The Web-based application Excelerate Live gives transportation companies the ability to create orders online, email detailed confirmations to carriers and drivers, create professional transportation invoices and send them electronically along with proof of delivery documents that are handled through the application's document imaging option. Users can also create a login for their clients to track and trace the status of their orders online.

www.virtualdispatch.com
888-218-6159

rfid/wireless

PINC Solutions

WHAT'S NEW: The development of a system for real-time yard visibility and management.
THE VALUE: The Yard Hound product suite uses low-cost RFID technologies to track the location and status of trailers and trace the movement of trucks in the yard.

www.pincsolutions.com
510-845-4900

White Paper Digest

Industry experts amass supply chain management best practices and skill sets, and invest in new research and evaluation tools. Now you can benefit. *Inbound Logistics* has selected this collection of whitepapers that will give you a jump on important supply chain issues. For more information on any of these whitepapers, visit the Web sites listed below.

LOGISTICS IT

Fortna

TITLE: ***ERP vs. WMS? Balancing Systems & Assets by Asking the Million Dollar Question***
LENGTH: *5 pages*
DOWNLOAD: *12.168.71.180/whitepapers/ERPvsWMS.pdf*
SUMMARY: Few supply chain decisions dramatically impact day-to-day business, overall company financial health, and customer relations more than selecting and implementing a warehouse management or supply chain execution system. Today, the lines between traditional ERP and WMS vendors are blurring. ERP providers, traditionally entrenched in financial and order management systems, are expanding the capabilities of their "within the four walls" functionality. Further, best-of-breed WMS providers are expanding into previously thin application areas of supply chain visibility, order management, and supply chain planning. As with most business decisions, it comes down to balancing your systems needs with your assets–money. This paper shows you how.

Retail Systems Research and Sterling Commerce

TITLE: ***The Need for the Agile Supply Chain: Rising Consumer Power Increases the Importance of Flexible Supply Chain Execution***
LENGTH: *10 pages*
DOWNLOAD: *www.sterlingcommerce.com/launch/whitepaper.htm*
SUMMARY: When business-to-business e-Commerce first became a real possibility, a rush of solutions flooded the market to address supply chain visibility. But demand did not match supply. At the time, companies were still focused on supply chain efficiency, and driving that efficiency through investments in forecasting and planning. Visibility didn't add much to that capability. But times have changed. The supply chain has become far more sophisticated and complex. For companies focused on consumer products within the extended retail industry, this is especially true. Today's winners look to excel not at impossible-to-achieve forecasting accuracy, but at flexible execution in reaction to unpredictable demand. The solution – supply chain visibility – was once ahead of its time, but now its time has come. This paper explains why.

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.

WhitePaperDigest

SMC³

TITLE: ***SMC³ RateWare®: Solving Supply Chain Pricing Complexities with Intelligent Rating***

LENGTH: *8 pages*

DOWNLOAD: *www.smc3.com/go/rwpaper*

SUMMARY: The rising costs associated with complex supply chains dictate the need for intelligent shipment rating solutions. Regardless of whether a rating is used for transportation procurement, planning, management, or settlement, intelligent rating helps improve the bottom line. This paper explains how RateWare® can be used to manage shipment costing and pricing, and apply intelligent rating processes throughout the supply chain.

Learn to minimize data movement and increase user accessibility in this whitepaper from Teradata Corporation.

Teradata Corporation

TITLE: ***When and Why to Put What Data Where***

LENGTH: *5 pages*

DOWNLOAD: *www.teradata.com/t/page/175838/index.html*

SUMMARY: Using the various layers of information properly is critical to the long-term success of complete data warehouse architecture. It is important to understand the goal: to minimize data movement and increase user accessibility. This will drive down the cost of managing and delivering new capabilities while increasing the timeliness of data and the relevancy of actions. This paper offers guidelines for understanding how and when to use data management architecture layers efficiently and effectively.

Texas Instruments

TITLE: ***Practical Performance Expectations for Smart Packaging***

LENGTH: *10 pages*

DOWNLOAD: *ti.com/rfid/docs/manuals/whtPapers/wp-Performance_expectations_for_smart_packaging.pdf*

SUMMARY: There seems to be a common expectation among radio frequency identification (RFID) newcomers that putting an inexpensive, passive smart label on a box creates accounting nirvana. But, reality comes crashing in when a pallet of cases is delivered through a dock door for the first time and only a handful of labels can be read. This paper addresses the expectations that are initially set when dealing with UHF RFID systems in the retail supply chain. First, it looks at realities surrounding read rates and how to address the gaps based on available time and money. Then it provides information on choosing the right tags and practical metrics for testing performance. Finally, this paper provides recommendations for setting realistic RFID expectations.

UASC vessel, *Al Abdali*, on her approach to the Port of Savannah
David Smalls - photographer

WhitePaperDigest

Vocollect

TITLE: ***It Always Comes Down to People: Addressing the Human Side of the Equation Boosts the Success of a Voice Deployment***

LENGTH: *19 pages*

DOWNLOAD: *www.vocollect.com/documents/It_Always_Comes_Down_to_People_White_Paper.pdf*

SUMMARY: This whitepaper outlines an 11-step process to guide companies through planning for a voice deployment – highlighting the successful experiences of several diverse companies. Successful voice-directed companies emphasize the importance of having a strong project implementation team along with establishing internal workplace advocates. Collectively, this human engagement ensures clear internal communication among employees, provides necessary training and support, and utilizes voice deployment as a key measurement tool to document employee performance as part of incentive programs.

TRANSPORTATION & SUPPLY CHAIN MANAGEMENT

C.H. Robinson

TITLE: ***How to Source, Implement, and Manage a Transportation Management Solution***

LENGTH: *9 pages*

DOWNLOAD: *www.chrobinson.com/tmc/SourceImplementManage.pdf*

SUMMARY: As companies assess their own transportation and logistics capabilities, questions naturally arise about the costs/benefits and provisions for outsourcing. Should they outsource portions of their supply chain? Is transportation management a core competency? Should they own, maintain, and upgrade their transportation software? Companies often dismiss these alternatives because they have had uneven success with 3PL-type relationships, they have heard of failed launches in the marketplace, or they are simply unsure how to implement such a significant change to their internal practices. When outsource relationships do fail, it's generally because of missteps before the relationship ever begins. This whitepaper highlights how to source, implement, and manage an outsourced transportation management solution.

Discover the complete range of capabilities businesses need to build and manage a high-performance supply chain in this whitepaper from COGNOS.

COGNOS

TITLE: ***7 Reports Every Supply Chain Executive Needs***

LENGTH: *6 pages*

DOWNLOAD: *www.cognos.com/pdfs/whitepapers/wp_supply_chain_seven_reports.pdf*

SUMMARY: With increasing requirements for better service, new products, and quicker delivery, the manufacturing sector remains one of the most competitive. All parties across the supply chain must help reduce costs, streamline production, and speed delivery in order to help their companies compete and remain profitable. This paper identifies the complete range of capabilities businesses need to build and manage a high-performance supply chain: interactive scorecards and dashboards, business event management, reporting and analysis, data integration, planning, budgeting, forecasting, and consolidation.

WhitePaperDigest

Denali Consulting

TITLE: ***Logistics Optimization: A Guide to Assessing and Improving Your Logistics Operation***
LENGTH: *7 pages*
DOWNLOAD: *www.denaliusa.com/pdfs/Whitepaper-090607.pdf*
SUMMARY: Effectively moving and storing materials from and to a complex network of suppliers and end users is not a simple task. The success of any world-class supply chain is heavily dependent upon the effectiveness of its logistics network and delivery capability – in essence, its logistics function, comprised of inventory, warehouse, and transportation management. This whitepaper presents a holistic approach for assessing logistics operations and developing a new strategy for the future.

Drewry Supply Chain Advisors

TITLE: ***Will China's Apparel Supply Chains Become Uncompetitive?***
LENGTH: *24 pages*
DOWNLOAD: *www.drewry.co.uk/www/Main.nsf/288B855627CB16C0802573930034E400/$File/SupplyChains.pdf*
SUMMARY: The sourcing of certain apparel products is set to shift from China to other Asian countries and to "intermediate offshore" countries such as Romania and Mexico that support faster supply chains. This paper offers analysis and end-to-end delivered product costs for men's shirts imported to the United States and the United Kingdom. It also identifies a number of key strategic issues related to international competition and supply chains from China and other apparel-producing countries.

ILOG

TITLE: ***Improving Plant Performance and Flexibility in Process Manufacturing***
LENGTH: *23 pages*
DOWNLOAD: *www.ilog.com/products/plantpowerops/whitepapers/index.cfm*
SUMMARY: In the production environment, it is well known that process manufacturing is different from discrete manufacturing. Finished goods are created through a continuous manufacturing process that involves the creation of multiple intermediate products that are then converted into hundreds of finished goods. Production recipes are very different from bills of material. Lead times are often less flexible. This whitepaper reviews the planning and scheduling challenges facing many process manufacturing companies, and provides information about new approaches that are making it easier to manage.

Streamline your supplier network with insights provided in this whitepaper by Intek Plastics.

Intek Plastics

TITLE: ***Driving Lean Through Your Supply Chain: The Cultivation of a More Efficient Supplier Network***
LENGTH: *9 pages*
DOWNLOAD: *www.intekplastics.com/IntekLean.pdf*
SUMMARY: While lean claims are now widespread, a recent study shows that only 40.5 percent of manufacturers have adopted lean as their primary improvement method. Another study indicates that lean adoption is 12 percent lower among process industries than it is among discrete manufacturers. Why is this so and what can be done about it? Find out what questions businesses need to ask to understand and evaluate suppliers as they skinny down their supply chains.


YOUR GOALS = OUR SOLUTIONS

WhitePaperDigest

FedEx and FinListics Solutions outline strategies for raising your company's awareness of logistics and how it can impact profitability.

FedEx and FinListics Solutions

TITLE: ***Transitioning From Backroom to Boardroom – The New Chief Logistics Officer***

LENGTH: *14 pages*

DOWNLOAD: *images.fedex.com/us/retail/Transitioning_from_BackRoom_to_BoardRoom-The_NewCLO.pdf*

SUMMARY: When asked to think about it, everyone would agree that transportation, distribution, and logistics play a huge role in operating any successful business. The problem is, few people ever think about these "backroom" concerns. They forget that the logistics network of planes, trains, trucks, people, and warehouses makes it all possible. While logistics management can have a direct and immediate impact on a company's financial health, this often goes unrealized. And while logistics professionals can play a critical role in improving a company's financial picture, their talent often goes untapped. This whitepaper will make the case and provide the data to help chief logistics officers move from the backroom to the boardroom so this story can be told, to the benefit of all.

Ruan

TITLE: ***Analyzing the Benefits of Outsourcing Your Transportation and Logistics Operations***

LENGTH: *9 pages*

DOWNLOAD: *www.ruan.com/White.Papers.html*

SUMMARY: In every business, the pressure to reduce supply chain costs and become more efficient is ever-present. Given the complexity of today's supply chains, coupled with driver shortages and rising fuel and insurance costs, more companies are considering outsourcing. From having a constant pool of well-qualified drivers and the ability to quickly modify operations to meet new government regulations to continuous focus on supply chain optimization, this paper offers a business case for private fleet outsourcing.

Saddle Creek Corporation

TITLE: ***2007 Food Logistics Industry Report***

LENGTH: *8 pages*

DOWNLOAD: *www.saddlecrk.com/cmfiles/whitePapers/whitepaper_foodLogistics.pdf*

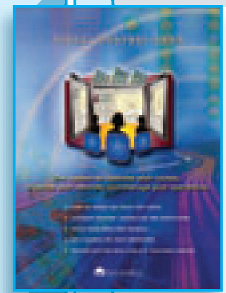
SUMMARY: What are the biggest challenges facing today's food logistics industry? What are the latest warehousing and transportation trends? How is technology impacting warehousing practices? This industry-wide report identifies common practices, challenges, and emerging trends within the U.S. food logistics industry.

TRADESHOW EXPRESS

Couldn't make it to the last trade show? Inbound Logistics brings that important trade show information to you.

Need help managing a broad range of facilities, activities, and assets? **Cadre Technologies** offers Cadence, a unified logistics system that not only provides the ability to manage inventory, orders, accounts, and transportation, but also gives Web access to your customers so they can search product catalogs, build and place orders, check order status, and locate inventory. Request your free brochure to find out more.

www.cadretech.com
866-252-2373



How does saving 25 percent or more on fuel and transit time sound? With **InterGis'** Visual Control Room you can make it happen by optimizing routes, organizing records, and managing operations. Visual Control Room lets you know precisely what is happening with your business minute-by-minute, and automates your most time-intensive management tasks. Want to learn more? Request this free brochure today.

www.intergis.com
860-496-4900

Just over the border is an extraordinary country—in terms of geography and business opportunity. Canada's trading partnership with the United States is the largest in the world. Imagine adding a California-sized revenue stream, with virtually no distribution overhead. It's possible through a **Purolator** USA North American supply chain program, custom-designed to build your revenue while maintaining costs. Get to know Canada in this prospectus.

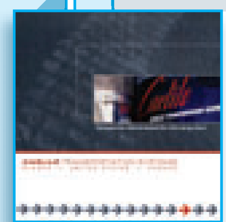
www.purolatorusa.com
516-681-3749

Sage Software's Sage MAS 90 and Sage MAS 200 Enterprise Resource Planning systems can propel your company to a more productive and profitable future. The software can be expanded to accommodate your company's requirements as you grow. In this brochure, you'll find information on the systems' 25 modules and hundreds of industry-specific add-ons to customize your business needs.

www.sagesoftware.com
800-854-3415

JDA Software Group focuses on helping companies realize supply chain and revenue management results—fast. Leading manufacturers, distributors, and retailers are growing their businesses with greater predictability and more profitability thanks to JDA's planning, execution, and optimization software. Find out how you can too with this complimentary information packet.

www.jda.com
800-479-7382



From consumer goods to construction materials, **Carlile** is a fully integrated transportation and logistics company that can move your products between Alaska and the United States and Canada. This leaflet details how its experience working in Alaska's extreme conditions, and under demanding schedules, can help create solutions to optimize container loads, delivery times, and freight handling—to meet your extreme transportation needs.

www.carlile.biz
800-478-1853

It is becoming increasingly more difficult to visit all the relevant trade shows. As a service to readers, Inbound Logistics brings the information from show exhibitors to you. Just call or visit the exhibitor web sites to make your requests.

TRADESHOW EXPRESS

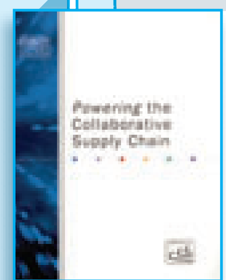
Couldn't make it to the last trade show? Inbound Logistics brings that important trade show information to you.

You might not need this brochure to know that the most efficient distance between two points is a straight line, but you might want to know where **Osprey Line** fits into this equation. Well beyond the capabilities of truck lines or railroads, it provides shippers the flexibility to meet all other connections—with greater efficiency. Osprey is that straight line.

www.ospreyline.com
281-867-1792

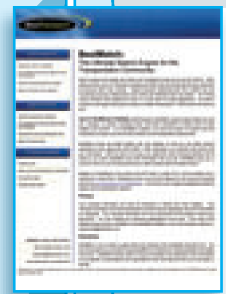
A free brochure from **S3 Group** describes the Operation Assessment service, which provides an impartial analysis of current warehouse or distribution operations and identifies potential opportunities for improvement. At the end of the assessment, the client receives the results, with low-cost tactical actions that can be implemented both immediately and over the long term.

www.s3groupinc.com
770-248-1239



Performance-driven enterprises using **Logility's** Voyager solutions find ways to leave competitors in the dust first by integrating data, then by integrating business processes, and finally by uniting supply chain partners into a single, seamless global value chain. Logility gives companies this type of power. To tap in, request this free brochure today.

www.logility.com
800-762-5207

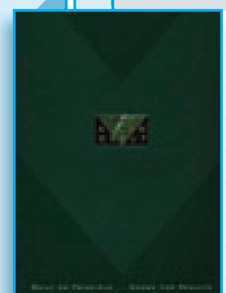


BestMatch, the ultimate transportation search engine, provides access to a growing online community of best-of-class shippers and carriers. This search engine, provided by **BestTransport**, gives members the power to conduct real-time transactions and gain up-to-the-minute visibility to new transportation opportunities. Find out more about this on-demand service by requesting a free data sheet.

www.besttransport.com/bestmatch
867-741-2378

Echo Global Logistics is a results-oriented transportation management firm that provides cost-saving technology and services. Echo's transportation management solution can help your company cut costs thanks to its proprietary access to transportation market data, custom-built world-class technology, massive nationwide carrier networks, and negotiating power. The details are all in this free brochure.

www.echogl.com
800-354-7993



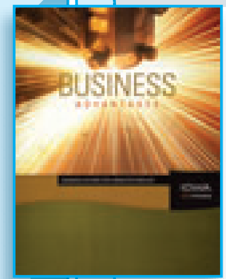
The Allen Group's master-planned logistics parks, located in key distribution markets throughout the United States, offer companies build-ready sites and industrial space for lease to help streamline supply chain processes. Where are these logistics hotspots? Where should your business be moving? Find out "where" in this pamphlet.

www.allengroup.com
858-764-6800

It is becoming increasingly more difficult to visit all the relevant trade shows. As a service to readers, Inbound Logistics brings the information from show exhibitors to you. Just call or visit the exhibitor web sites to make your requests.

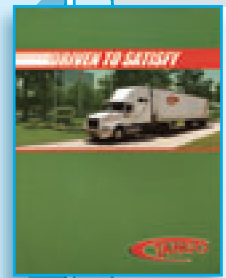
TRADESHOW EXPRESS

Couldn't make it to the last trade show? Inbound Logistics brings that important trade show information to you.



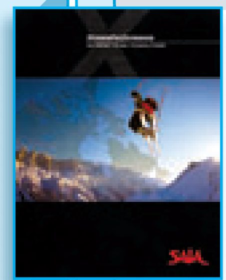
Iowa is perfectly positioned in the global economy and its business climate has never been more favorable – companies doing business in Iowa enjoy one of the nation's most business-friendly atmospheres. Find out more about how the **Iowa Department of Economic Development** works with businesses to bolster the economy and position the state for growth in this free informational brochure.

www.iowalifechanging.com
800-245-4692



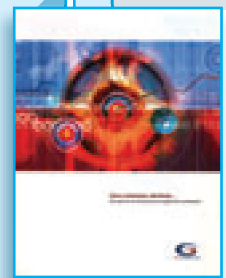
Tango Transport is driven by principles and values that might seem old-fashioned today. It isn't consumed by the bottom line, but rather doing what's right for its customers. Whether your looking for dedicated contract carriage, expedited services, 3PL solutions, or freight brokerage, Tango is a partner you can trust. Find out for yourself in this free pamphlet.

www.tangotransport.com
800-368-0599



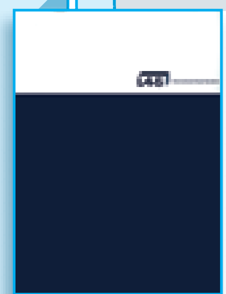
Give **Saia** a ring and find out how ONETrak can team up on your behalf. The carrier's partnership program puts you on the fast track for reliable, worry-free shipping to and from Canada. A linked AS/400 network provides the detailed information you need when you need it. It's as simple as one call, one contact, one pro number, and one invoice – that's ONETrak.

www.saia.com
800-765-7242



Core e-business solutions provide an unparalleled mix of software and professional services, bringing best-in-class supply chain systems within reach of small and mid-sized companies. Core provides cutting-edge solutions, innovative deployment, outstanding service, and measurable results. See how Core can transform your warehouse operations into a profitable, adaptable logistics hub; request this free brochure today.

www.coreebusiness.com
201-791-8900



Intermodal shippers will quickly begin saving substantial time and money by automating trucking dispatch operations with **IAS**-Trinium's new service, DispatchManager. The dispatch solution delivers capabilities as an economical subscription-based service that supplants the inefficient manual process of dispatching work orders via fax, e-mail, and telephones from originators to intermodal trucking companies. Send for a free flyer to learn more.

www.interasset.com
510-844-3000

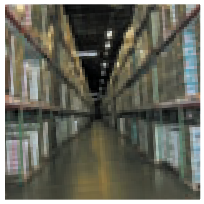
Satisfying customers while increasing revenue is unquestionably a top priority. **Manhattan Associates** can help you accomplish these goals with its Integrated Planning Solutions, which balance supply and demand by optimizing planning and replenishment. Send for this free brochure to learn how Manhattan Associates can make your job easier and serve your customers better.

www.manh.com
770-955-7070

It is becoming increasingly more difficult to visit all the relevant trade shows. As a service to readers, Inbound Logistics brings the information from show exhibitors to you. Just call or visit the exhibitor web sites to make your requests.

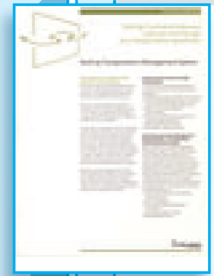






TRADESHOWEXPRESS

Couldn't make it to the last trade show? Inbound Logistics brings that important trade show information to you.



Looking for a smarter way to manage transportation? Send for this brochure from **Sterling Commerce**, describing its Transportation Management System. Sterling's TMS provides on-demand, Web-based access to a collaborative logistics network of more than 6,400 carriers. Sterling's TMS can help you reduce shipping costs and errors, access timely carrier information, and increase speed to market.

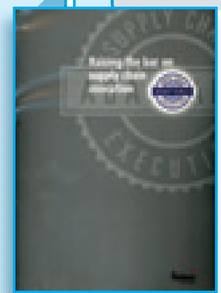
www.sterlingcommerce.com
614-793-4041

When it comes to last-mile delivery, furniture and appliances are anything but low maintenance. Most have a knack for living up to the words "handle with care" and "some assembly required." And all of them tend to involve more hands-on service than the average driver can provide. No one knows this better than **3PD**. Send for its free service catalog and see why there is no one better prepared to help.

www.3pd.com
866-3PD-RUSH

Check out this detailed prospectus of the **Panama Canal Authority's** expansion project. Panama's destiny is inextricably linked to the seas. Its global course is now further strengthened by a new management model and a development plan–Third Set of Locks Project–to create a new lane of traffic through the Canal.

www.pancanal.com
011-507-272-1111



Forward-thinking companies entrust **HighJump Software** to power their supply chains. HighJump simplifies the art and business of creating, selling, and moving products across global networks. In this brochure, you'll see how online grocer SimonDelivers uses HighJump's Warehouse Advantage solution to ensure customers receive high-quality products through just-in-time inventory processes that maintain product freshness.

www.highjump.com
952-947-4088

When it comes to managing the flow of your goods, you can trust **Saddle Creek Corporation's** intricate planning, careful execution, flexibility, and ingenuity. From warehousing and transportation to contract packaging and integrated logistics, it has the resources to handle logistics challenges in every location and situation. Find out what a first-class third-party logistics provider can do for you in this free brochure.

www.saddlecrk.com
888-878-1177

Carolina Logistics Services (CLS) is an industry leader in providing supply chain analysis, product performance intelligence, and reverse logistics solutions to manufacturers, retailers, and wholesalers in the consumer goods market. With facilities in 38 U.S cities, sites in Mexico and Canada, and three million square feet of warehouse space, CLS has the resources to drive your supply chain forward or reverse. Request this service leaflet and find out how.

www.cls.inmar.com
866-440-6917

It is becoming increasingly more difficult to visit all the relevant trade shows. As a service to readers, Inbound Logistics brings the information from show exhibitors to you. Just call or visit the exhibitor web sites to make your requests.

Discover the Great Value of Quality Transportation and Warehousing in the Northeast.

Bilkays / DWS now has two great locations for warehousing and shipping services in Elizabeth and Linden, NJ. With over 300,000 sq. ft. at the crossroads of the Northeast and the gateway to the world. Minutes from all NY bridge and tunnel crossings, plus NY ports and major railyards.

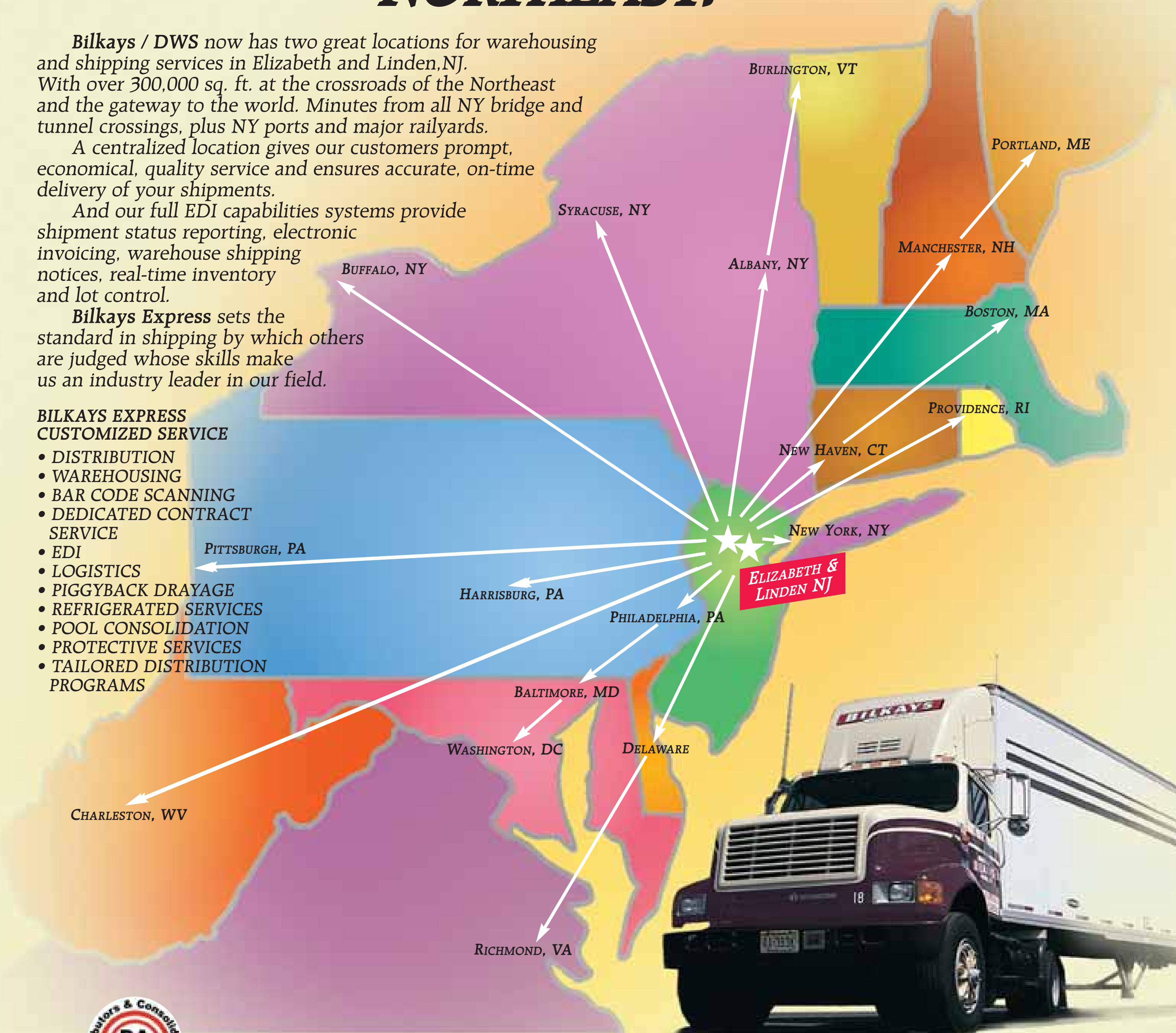
A centralized location gives our customers prompt, economical, quality service and ensures accurate, on-time delivery of your shipments.

And our full EDI capabilities systems provide shipment status reporting, electronic invoicing, warehouse shipping notices, real-time inventory and lot control.

Bilkays Express sets the standard in shipping by which others are judged whose skills make us an industry leader in our field.

BILKAYS EXPRESS CUSTOMIZED SERVICE

- DISTRIBUTION
- WAREHOUSING
- BAR CODE SCANNING
- DEDICATED CONTRACT SERVICE
- EDI
- LOGISTICS
- PIGGYBACK DRAYAGE
- REFRIGERATED SERVICES
- POOL CONSOLIDATION
- PROTECTIVE SERVICES
- TAILORED DISTRIBUTION PROGRAMS



BILKAYS EXPRESS CO.

DISTRIBUTION WAREHOUSE & SERVICE CORP.

Elizabeth: 400 South Second Street, Elizabeth, NJ 07206
908-289-2400 • 800-526-4006 • Fax: 908-289-6364

Linden: 2400 Bedle Place, Linden, NJ 07036
908-486-9200 • 800-526-4006 • Fax: 908-587-0636

E-mail: sales@bilkays.com
Visit our web site: www.bilkays.com

RESOURCE CENTER

01.08

INBOUND LOGISTICS WORKS FOR YOU!

3PLs

■ **3PDelivery**
www.3pdelivery.com 866-373-7874
Does the name 3PDelivery ring a bell? It should – its employees ring bells every day as part of the company's 3 million last-mile deliveries each year.
AD PAGE: 95 PROFILE: 337

■ **4 Way Logistics**
www.4way.com 800-282-4990
4 Way Logistics provides real solutions to customer needs through unbiased evaluation; consistent, clear communication; and expeditious handling of every shipment from beginning to end. 4 Way demonstrates its commitment by exceeding expectations.
AD PAGE: 301 PROFILE: 338

■ **A.N. Deringer**
www.anderinger.com 888-612-6239
Having a hard time building a solid supply chain? A.N. Deringer builds relationships. Since 1919, Deringer has been setting the standard for trade and logistics management. Today, it continues to build relationships with companies of all sizes - helping to deliver products to customers, on time and in compliance.
AD PAGE: 125 PROFILE: 339

■ **Access Business Group**
www.accesslogistics.com 800-879-2732
Committed to providing the highest-quality logistics and fulfillment expertise with the right-sized solutions, Access Business Group delivers logistics services your finance folks will love.
AD PAGE: 33 PROFILE: 341

■ **Active On-Demand**
www.activeondemand.com 734-547-7200
Active On-Demand's transportation management systems provide clients with exclusive technology solutions that optimize mode, carrier, and service execution of ground expedite, air cargo, and air charter services that are vital to their supply chains and production operations.
AD PAGE: 52 PROFILE: 342

■ **AFN**
www.afnww.com 866-766-8348
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: 267 PROFILE: 343

■ **Agility**
www.agilitylogistics.com 714-513-3000
For Agility employees in more than 100 countries around the world, success isn't measured in boxes loaded or shipments tracked. Success occurs when partners achieve their goals.
AD PAGE: 85 PROFILE: 344

■ **AmeriCold**
www.americold.net 678-441-1400
Move your temperature-controlled shipments and reach new markets easily and affordably with AmeriCold LTL. AmeriCold's coast-to-coast service gives you greater efficiency and greater economy. AmeriCold delivers – you get the benefits.
AD PAGE: 97 PROFILE: 347

■ **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: 313 PROFILE: 348

■ **ATC Logistics & Electronics**
www.atcle.com 800-466-4202
By using ATC Logistics & Electronics' proven, world-class solutions, you will exceed your customers' delivery and service expectations.
AD PAGE: 139 PROFILE: 349

■ **Automated Distribution Systems**
www.adslp.com 864-902-0540
Automatic Distribution Systems' state-of-the-art technology makes it an award-winning 3PL. Companies needing customized distribution and fulfillment services should get acquainted with ADS' offerings.
AD PAGE: 131 PROFILE: 351

For a specific response, contact these advertisers directly. Please tell them you saw their ad in *Inbound Logistics*.

For general questions about particular industry segments, use the card between pages 288-289.

For faster service, go online: inboundlogistics.com/rfp

RESOURCE CENTER

01.08

INBOUND LOGISTICS WORKS FOR YOU!

For a specific response, contact these advertisers directly. Please tell them you saw their ad in *Inbound Logistics.*

For general questions about particular industry segments, use the card between pages 288-289.

For faster service, go online: inboundlogistics.com/rfp

Bender Group
www.bendergroup.com 800-621-9402

People always say, "think outside the box," but for logisticians, it's more important to think about the box. That's what Bender Group does, offering intelligent logistics solutions including warehouse design, transportation, and consulting.

AD PAGE: 265 **PROFILE:** 353

Big Dog Group
www.bigdoggroup.com 713-996-8171

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: 237 **PROFILE:** 354

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 add up to a winning combination.

AD PAGE: 298 **PROFILE:** 356

BNSF Logistics
www.bnsflogistics.com 877-853-4756

BNSF Logistics puts your logistics pieces in place so you can focus on business. Combining expansive knowledge with integrated technology systems, BNSF streamlines your organization.

AD PAGE: 61 **PROFILE:** 357

C.H. Robinson Worldwide
www.chrobinson.com 800-323-7587

C.H. Robinson's bold, flexible multimodal approach gives you the solutions you need to stay on top of your logistics challenges.

AD PAGE: 183 **PROFILE:** 359

Cardinal Logistics Management
www.cardlog.com 800-800-8293

When your first choice is Cardinal, you won't give a second thought to other 3PLs. Cardinal's experience, technology, and service can add up to profits for your company's bottom line.

AD PAGE: 21 **PROFILE:** 362

Cat Logistics
www.catlogistics.com 309-675-4388

Take the guesswork out of optimizing your supply chain performance. Cat Logistics has a proven track record of delivering fast and reliable solutions to improve revenue, reduce overall costs, and optimize asset utilization.

AD PAGE: 41 **PROFILE:** 365

CEVA Logistics
www.cevalogistics.com 904-928-1400

CEVA designs and manages supply chain strategies recognized around the world for making business flow. Combining the heritage of two great companies, TNT Logistics and EGL Eagle Global Logistics, CEVA provides contract logistics, freight forwarding, distribution management, and transportation management solutions.

AD PAGE: 223 **PROFILE:** 367

ClearPointt
www.clearpointt.com 866-894-8399

Whether your company is large or small, ClearPointt provides you with a specifically assigned logistics specialist who serves as the primary point of contact for all your business needs.

AD PAGE: 121 **PROFILE:** 369

COGISTICS
www.cogistics.com 863-647-9389

Does saving big money appeal to you? COGISTICS can show you how to reduce your transportation and inventory carrying costs simultaneously.

AD PAGE: 315 **PROFILE:** 370

Corporate Traffic
www.corporate-traffic.com 904-727-0051

In this fast-paced world, it can be difficult to keep important things in focus. Corporate Traffic focuses on your needs, offering logistics services including DCC, outsourced logistics, warehousing, and distribution.

AD PAGE: 287 **PROFILE:** 371

CRST Logistics
www.crstlogistics.com 888-204-9607

With more than 22,000 transportation and logistics service drivers to draw from, CRST Logistics multiplies your resources for greater reliability and ROI.

AD PAGE: 9 **PROFILE:** 374

RESOURCE CENTER

01.08

INBOUND LOGISTICS WORKS FOR YOU!

For a specific response, contact these advertisers directly. Please tell them you saw their ad in *Inbound Logistics.*

For general questions about particular industry segments, use the card between pages 288-289.

For faster service, go online: inboundlogistics.com/rfp

RESOURCE CENTER

01.08

INBOUND LOGISTICS WORKS FOR YOU!

For a specific response, contact these advertisers directly. Please tell them you saw their ad in *Inbound Logistics*.

For general questions about particular industry segments, use the card between pages 288-289.

For faster service, go online: inboundlogistics.com/rfp

Kenco Logistic Services
www.kencogroup.com 800-758-3289

Kenco Logistic Services is a logistics partner willing to bend over backward to solve your ever-changing challenges.

AD PAGE: 113 **PROFILE:** 405

Landair
www.landair.com 423-783-1230

A lot of companies talk about integrated supply chain solutions. Landair doesn't just talk, it gets it done. Landair offers supply chain solutions that improve your bottom line.

AD PAGE: 227 **PROFILE:** 406

Landstar Global Logistics
www.landstargloballogistics.com 904-390-1078

Landstar's unique network of third-party transportation and warehouse capacity owners ensures that you get the most cost-effective, customized solutions for your shipping operation.

AD PAGE: 149 **PROFILE:** 408

LeSaint Logistics
www.lesaint.com 847-783-4940

Looking for a logistics provider that knows how to manage the complexities of your supply chain? Turn to LeSaint Logistics, a nationally recognized 3PL specializing in chemical logistics.

AD PAGE: 117 **PROFILE:** 409

Lily Transportation Corp.
www.lily.com 800-248-LILY

Many well-known companies have already come to Lily Transportation for their dedicated logistics needs. Trust the company named after Mom.

AD PAGE: 25 **PROFILE:** 410

Logistic Dynamics
www.logisticdynamics.com 800-554-3734

Tired of juggling different trucking needs? Let Logistic Dynamics help. Logistic Dynamics offers dry van, reefer, flatbed, expedited, LTL, and other trucking services.

AD PAGE: 259 **PROFILE:** 411

Lynden
www.shiplynden.com 888-596-3361

Lynden's EZ Commerce Center uses the latest technology to enable customers to request pickups, generate documents, trace shipments, view delivery receipts, download shipment activity reports any time, and receive invoices electronically.

AD PAGE: 7 **PROFILE:** 415

LynnCo Supply Chain Solutions
www.lynnco-scs.com 866-872-3264

When it comes to lean logistics, there is an easy answer: LynnCo Supply Chain Solutions. LynnCo helps manufacturers extend the lean principle outside the four walls to streamline the flow of product into and out of their facilities.

AD PAGE: 261 **PROFILE:** 416

Maersk Logistics
www.maersklogistics.com 973-514-5000

If you need to create new opportunities in global commerce, turn to Maersk Logistics. Maersk's tailor-made solutions and dedicated customer service team give you a competitive advantage.

AD PAGE: 49 **PROFILE:** 418

Mallory Alexander International Logistics
www.mallorygroup.com 800-257-8464

Mallory Alexander International Logistics provides warehousing, freight forwarding, customs brokerage, import/export services, intermodal trucking and transportation, logistics services, and consulting.

AD PAGE: 107 **PROFILE:** 419

Megatrux Companies, Inc.
www.megatrux.com 800-544-8831

Whether you move one box or 30,000 pallets, Megatrux Companies can be your one-stop global supply chain solution to the world.

AD PAGE: 234 **PROFILE:** 424

RESOURCE CENTER

01.08

INBOUND LOGISTICS WORKS FOR YOU!

For a specific response, contact these advertisers directly. Please tell them you saw their ad in *Inbound Logistics.*

For general questions about particular industry segments, use the card between pages 288-289.

For faster service, go online: inboundlogistics.com/rfp

NAL Worldwide
www.nalworldwide.com 800-316-6860

NAL Worldwide is an industry leader focused on inventory innovation and solutions to manage time-sensitive, complex supply chains. With NAL Worldwide's solutions, companies react effectively to business demands and turn inventory quickly.

AD PAGE: 293 **PROFILE: 427**

New Breed Logistics
www.newbreed.com 866-4-NEW-BREED

New Breed knows that just because you outsource logistics doesn't mean you want to give up control. New Breed sweats the details, just like you.

AD PAGE: Cover 2, 1 **PROFILE: 430**

Nexus Distribution Corporation
www.nexusdistribution.com 800-536-5220

Warehousing, transportation, and logistics - where do they all come together? At Nexus Distribution Corporation. Anyone can store inventory, but when it comes to service, event communication, and scalability, Nexus really delivers.

AD PAGE: 233 **PROFILE: 431**

Odyssey Logistics & Technology
www.odysseylogistics.com 203-448-3900

Chemical and process companies turn to Odyssey Logistics & Technology for their transportation needs. Odyssey is one provider serving all modes, all over the world.

AD PAGE: 101 **PROFILE: 434**

On Time Freight Handling
www.ontimecorp.com 800-817-0912

With guaranteed truck in and out times, incentives for employees based on performance, and mobile technology and reporting solutions, On Time Freight Handling delivers on-time staffing to keep you on schedule.

AD PAGE: 307 **PROFILE: 436**

Ozburn-Hessey Logistics
www.ohlogistics.com 800-401-6400

You'll know exactly where your shipments are when you have OH Logistics as your global supply chain management partner.

AD PAGE: 127 **PROFILE: 439**

Paradigm Logistics
www.paradigmlog.com 866-941-7400

Hungry for an effective partner for your food logistics and distribution needs? Contact Paradigm Logistics, the North American foodservice industry's premier logistics management organization.

AD PAGE: 56 **PROFILE: 441**

Pegasus Logistics Group
www.pegasuslogisticsgroup.com 800-997-7226

Many companies talk about superior customer service, but few companies actually deliver it. Pegasus Logistics Group lives for service.

AD PAGE: 99 **PROFILE: 442**

Penske Logistics
www.penskelogistics.com 800-221-3040

Penske works one-to-one with customers to design customized logistics and supply chain solutions that instill process excellence, improve productivity, enhance quality and service, and ultimately drive down costs.

AD PAGE: 43 **PROFILE: 444**

Performance Team
www.ptgt.net 562-345-2212

Performance Team is a national leader in custom end-to-end logistics solutions for the retail and manufacturing industries.

AD PAGE: 185 **PROFILE: 446**

Port Jersey Logistics
www.portjersey.com 609-860-5489

Port Jersey Logistics offers total supply chain management services for domestic manufacturers and international shippers.

AD PAGE: 153 **PROFILE: 448**

Priority Distribution Inc.
www.pdi3pl.com 732-234-1919

If selecting the best transportation 3PL is puzzling to you, PDI can provide the perfect fit. PDI is a full-service transportation and supply chain solutions provider.

AD PAGE: 263 **PROFILE: 451**

RESOURCE CENTER

01.08

INBOUND LOGISTICS WORKS FOR YOU!

For a specific response, contact these advertisers directly. Please tell them you saw their ad in *Inbound Logistics.*

For general questions about particular industry segments, use the card between pages 288-289.

For faster service, go online: inboundlogistics.com/rfp

ProTrans
www.protrans.com 888-776-8726

ProTrans defines supply chain management with its creative thinking and customized logistics solutions, allowing you to concentrate on your business.

AD PAGE: 29 **PROFILE:** 452

RK Logistics Group
www.rkgllc.com 800-821-7770

To meet your unique business demands, RK Logistics Group delivers superior service with efficient on-time reliability.

AD PAGE: 195 **PROFILE:** 455

RMX Global Logistics
www.rmxglobal.com 888-824-7365

Because business these days is more cutthroat than ever, you need every advantage you can get. RMX Global Logistics offers capacity and service performance you can count on.

AD PAGE: 181 **PROFILE:** 457

RUAN
www.ruan.com 866-RUAN-NOW

RUAN is driven to move you forward. With more than 75 years of experience, RUAN continues to think of new ways to help its clients maximize the bottom line.

AD PAGE: 63 **PROFILE:** 458

Ryder
www.ryder.com 888-88-RYDER

Name your product, and Ryder will customize a supply chain for it. Unmatched experience, flexibility, and expertise make Ryder the one to turn to all over the globe.

AD PAGE: 13 **PROFILE:** 459

Saddle Creek Corporation
www.saddlecrk.com 863-665-0966

For the past 40 years, Saddle Creek has served customers with warehousing, transportation, contract packaging, and integrated logistics services.

AD PAGE: 141 **PROFILE:** 460

Salem Logistics
www.salemlogistics.com 336-725-5268

When it comes to meeting your supply chain needs, nobody manages transportation better than Salem Logistics.

AD PAGE: 19, 62 **PROFILE:** 462

SinoNRS
www.sinonrs.com 877-345-4-NRS

National Retail Systems (NRS) has teamed up with Sinotrans, China's largest integrated logistics company, to offer a revolutionary solution for seamless factory-to-store import delivery. It's the best of both worlds in one logistics partner.

AD PAGE: 197 **PROFILE:** 428

Smart Management Group
www.smartmanagementgroup.com 267-246-1150

Smart Management Group provides tactical logistics management and strategic integrated supply chain solutions designed to enhance your ability to succeed. When you get Smart, you get results.

AD PAGE: 295 **PROFILE:** 466

TLC - Total Logistic Control
www.totallogistic.com 800-333-5599

If your supply chain ends at the retail shelf, your 3PL search should start with TLC. Maximize your supply chain value by partnering with TLC for source-to-shelf logistics solutions.

AD PAGE: Cover 3 **PROFILE:** 471

TMSi
www.tmsilog.com 603-373-7235

TMSi is your single source for distribution and warehouse support services, engineering services, dedicated contract carriage, freight management, and warehouse and transportation management.

AD PAGE: 135 **PROFILE:** 472

RESOURCE CENTER

01.08

INBOUND LOGISTICS WORKS FOR YOU!

For a specific response, contact these advertisers directly. Please tell them you saw their ad in *Inbound Logistics.*

For general questions about particular industry segments, use the card between pages 288-289.

For faster service, go online: inboundlogistics.com/rfp

■ Transfreight

www.transfreight.com 888-890-0400

As a premier 3PL, Transfreight understands total logistics costs. Transfreight's team develops and delivers customized supply chain solutions to help you understand–and reduce–your total logistics costs.

AD PAGE: 23 **PROFILE: 473**

■ TransGroup Worldwide Logistics

www.transgroup.com 800-244-0294

It's easy to lose track of shipments when you're managing the supply chain by yourself. Why not try TransGroup Worldwide Logistics, one of the big guns in the logistics business? Let a professional do the dirty work for you.

AD PAGE: 243, 253 **PROFILE: 474**

■ Transplace

www.transplace.com 973-731-4500

Transplace is committed to delivering supply chain excellence through an optimal network of industry-leading services and technology. With Transplace, you get more – more speed, more technology, more connectivity, and more smarts.

AD PAGE: 175 **PROFILE: 475**

■ Tucker Company

www.tuckerco.com 800-229-7780

When you need a competitive advantage, turn to Tucker Company, the freight management specialist. Tucker excels at finding the reliable capacity you need with the highest levels of security, control, and performance.

AD PAGE: 270 **PROFILE: 477**

■ Unyson Logistics

www.unysonlogistics.com 630-271-3600

When your supply chain works in unison you reap strategic benefits. Unyson Logistics helps you drive out supply chain costs by creating solutions that offer unity, visibility, and stability.

AD PAGE: 244 **PROFILE: 483**

■ Verst Group Logistics

www.verstgroup.com 877-375-8377

Verst Group Logistics knows the strategic health of every product-based company depends on the effectiveness of its supply chain management. Its world-class service and flexible solutions allow you to focus on what you do best.

AD PAGE: 137 **PROFILE: 487**

■ Wagner Industries

www.wagnerindustries.com 800-817-1264

Narrow definitions don't fit Wagner Industries. Wagner offers a diverse range of competencies that seamlessly integrate into your supply chain processes.

AD PAGE: 171 **PROFILE: 488**

■ Werner Enterprises

www.werner.com 800-228-2240

Werner Enterprises, a logistics provider backed by global connectivity, assets, experience, and financial stability, offers local logistics knowledge applied worldwide.

AD PAGE: 177 **PROFILE: 490**

■ Wheels Group

www.wheelsgroup.com 905-602-2700

Wheels Group moves at the speed you need to analyze, recommend, and implement a supply chain strategy that will get your profits rolling.

AD PAGE: 147 **PROFILE: 492**

■ WITRON Integrated Logistics

www.witron.com 847-385-6000

Successful companies have successful logistics systems. WITRON Integrated Logistics helps companies achieve logistics success by designing, implementing, and supporting supply chain solutions.

AD PAGE: 305 **PROFILE: 493**

■ Zimag Logistics

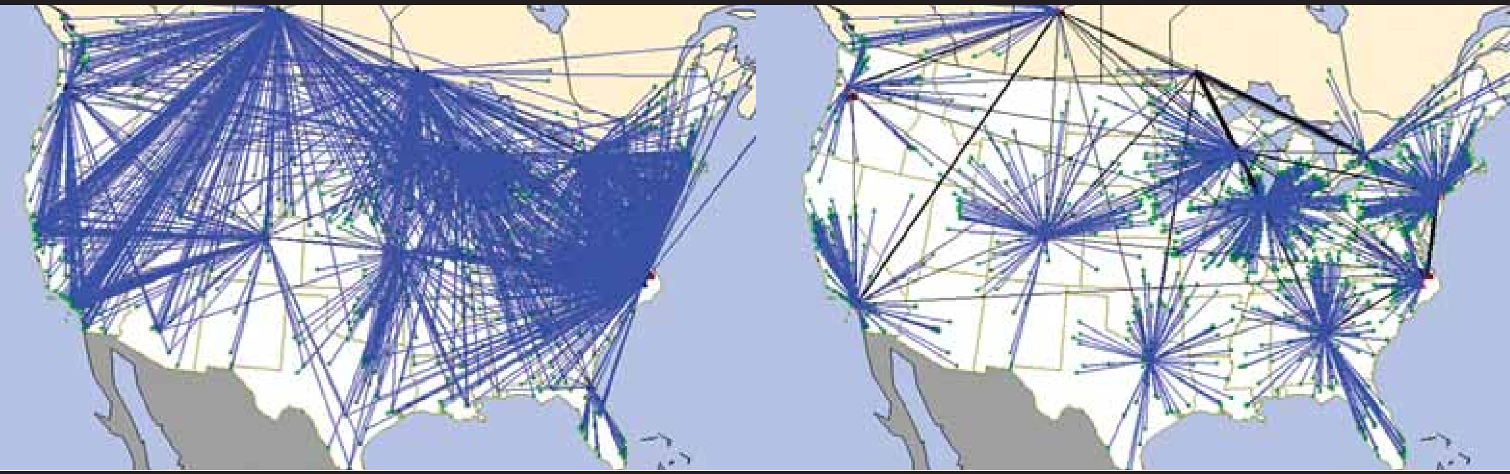
www.zimag.com.mx (52) 55 19 40 1900

Zimag Logistics is a leader in Mexico's shipping, warehousing, distribution, and logistics industry. Its national network includes 21 warehouses, more than 700 truck fleets, integrated IT systems, and 1,169 dedicated associates.

AD PAGE: 203 **PROFILE: 494**

Which Network is Better?

Attend one of our free webcasts to learn why ILOG Supply Chain Applications and the LogicTools Suite help companies make better decisions faster. www.logic-tools.com/webcasts



ILOG Supply Chain Applications

Helping companies make better decisions faster.

ILOG's Supply Chain Applications are a suite, called LogicTools, of optimization-based decision support solutions that complement and enhance existing ERP and APS solutions.

LogicTools Suite of Products

ILOG LogicNet Plus XE®
Network Design & Planning

ILOG Inventory Analyst™
Global Inventory Optimization

ILOG Plant PowerOps®
Production Planning & Scheduling

ILOG Transport PowerOps®
Transportation Planning & Scheduling

ILOG®

Changing the rules of business™

- **Design the overall supply chain to optimize the number, size, and location of plants, warehouses, ports, and cross-dock facilities that provide the lowest total supply chain costs.**
- **Develop an optimized sourcing plan when products can be made at multiple sites across the globe.**
- **Develop seasonal build plans that optimize production, inventory, warehousing, and logistics costs.**
- **Understand logistics and warehousing implications as fuel prices continue to rise.**
- **Improve upon traditional rule of thumb inventory targets and service level policies.**
- **Feed ERP and APS solutions optimal inventory targets on an on-going basis, driving further performance from these systems.**
- **Create transportation plans and schedules that balance transport costs and service in complex freight networks.**
- **Improve upon production planning and detailed scheduling to better incorporate tank management, CIP processes, and multi-dimensional changeovers unique to food and beverage, pharmaceutical, and chemical industry verticals.**

RESOURCE CENTER 01.08

INBOUND LOGISTICS WORKS FOR YOU!

For a specific response, contact these advertisers directly. Please tell them you saw their ad in *Inbound Logistics.*

For general questions about particular industry segments, use the card between pages 288-289.

For faster service, go online: inboundlogistics.com/rfp

Air Cargo

■ Delta Cargo
www.deltacargo.com 800-352-2746
With continued international expansion, Delta Cargo makes it easier than ever to send cargo all over the globe.
AD PAGE: 279 PROFILE: 377

Barge

■ American Commercial Lines
www.aclines.com 866-288-6225
Safe, clean, and fuel efficient, ACL is also one of the most reliable transportation modes. If you ship by rail today, consider a water alternative with ACL.
AD PAGE: 93 PROFILE: 346

Career Development/Education

■ California State University, Long Beach
www.uces.csulb.edu/citt 562-296-1170
The University College & Extension Services from California State University, Long Beach, combine the best of both worlds: face-to-face and online instruction for logistics professionals by leading industry experts.
AD PAGE: 317 PROFILE: 361

■ Georgia Tech's Supply Chain & Logistics Institute
www.scl.gatech.edu 404-894-2343
Remain at the forefront of the logistics field with Georgia Tech's Supply Chain & Logistics Institute. Find courses in materials handling, logistics optimization, inventory planning, and other hot topics.
AD PAGE: 323 PROFILE: 390

■ Institute of Logistical Management
www.logisticseducation.edu 609-747-1515
Become a part of the oldest logistics distance learning school in the world that has helped more than 84,000 alumni navigate their careers in supply chain and logistics since 1923. The Institute of Logistical Management offers distance learning in many areas of logistics and supply chain management.
AD PAGE: 327 PROFILE: 397

■ Lion Technology
www.lion.com/hazmat 888-546-6511
Lion's unique online hazmat training brings your team up to speed on complying with the latest Department of Transportation regulations.
AD PAGE: 274

■ Pennsylvania State University, Smeal MBA
www.smeal.psu.edu 814-865-0585
Pursue your MBA with the business school that knows supply chain management best. Penn State's Smeal MBA program is the real deal.
AD PAGE: 319 PROFILE: 443

Cargo Restraint Systems

■ Logistick
www.logistick.com 800-758-5840
Logistick knows the problems the transportation industry faces, including damages, freight claims, and customer satisfaction. It offers a unique way to add quality to your delivery, with simple-to-install products that keep your shipments damage-free.
AD PAGE: 277 PROFILE: 412

Consultants

■ Franzetta and Associates
www.franzetta.com 814-466-9010
When your supply chain consultant is Franzetta and Associates, you benefit from supply chain management and logistics technology experts.
AD PAGE: 321 PROFILE: 387

■ Gumro and Associates
www.gumroandassociates.com 248-652-6200
Gumro and Associates solves distribution problems by taking a personalized approach to individual businesses and focusing on quality customer service. Allow Gumro and Associates to illuminate the possibilities for you.
AD PAGE: 207 PROFILE: 392

RESOURCE CENTER

01.08

INBOUND LOGISTICS WORKS FOR YOU!

For a specific response, contact these advertisers directly. Please tell them you saw their ad in *Inbound Logistics*.

For general questions about particular industry segments, use the card between pages 288-289.

For faster service, go online: inboundlogistics.com/rfp

ORTEC

www.ortec.com 678-392-3100

Providing logistics optimization solutions to industry leaders since 1981, ORTEC supports clients to make the right decisions on a strategic, tactical and operational level.

AD PAGE: 38 **PROFILE:** 438

Events

Material Handling Industry of America

www.nashow.com 800-446-2622

Register now for the NA 2008 Material Handling and Logistics Conference and show, sponsored by the Material Handling Industry of America, April 21-24 in Cleveland, Ohio. NA 2008 is your one event in 2008 to see, touch, and operate the latest innovations that will make your supply chain work more productively and profitably.

AD PAGE: 91 **PROFILE:** 421

Expedited Air/Ground

California Overnight

www.calover.com 800-334-5000

High-volume shippers can get next-day delivery for ground rates with California Overnight's CalTrac Service. Shipments that take two days for delivery through national carriers are now guaranteed next-day by 5 p.m.

AD PAGE: 285 **PROFILE:** 360

Mach 1

www.mach1air.com 800-553-7774

It's your business to make sure the right product is available at the right place, at the right time. Mach 1 makes it their business, too. Transform your logistics reputation from geek to chic with Mach 1.

AD PAGE: 225 **PROFILE:** 417

Panther Expedited Services

www.pantherexpedite.com 800-685-0657

Offering ground expedited, special handling, and air options for critical freight, Panther delivers on time, every time, anytime, and anywhere. Look to Panther for industry-leading service combined with state-of-the-art technology.

AD PAGE: 169 **PROFILE:** 440

Service By Air

www.servicebyair.com 800-466-9722

No matter where or what time in the world, Service By Air is ready to assist you. With 35 years of experience delivering shipments on time, Service By Air is committed to providing quality service and accommodating each customer's needs with value-added solutions.

AD PAGE: 47 **PROFILE:** 465

Velocity Express

www.velocityexpress.com 888-839-7669

Real Time Delivery from Velocity Express is a new way to deliver almost anything, almost anywhere – at virtually any time.

AD PAGE: 111 **PROFILE:** 485

Freight Payment Services

Cass Information Systems

www.cassinfo.com 314-506-5500

All freight payment services are not equal. With the most industry experience in implementing complex processing systems, Cass Information Systems is the leader in customized freight bill audit, rating, payment, and information services.

AD PAGE: 179 **PROFILE:** 364

CT Logistics

www.ctlogistics.com 216-267-2000

CT Logistics' FreitRater software is exclusive, its solutions are customized, and its reputation is unsurpassed. Contact CT Logistics to find out more about its pre-audit and freight payment services, transportation management software and other innovative ideas.

AD PAGE: 289 **PROFILE:** 376

PowerTrack

www.powertrack.com 800-417-1844

The PowerTrack network, owned by U.S. Bank, effectively collaborates with customers around the globe to link physical supply chain events and financial data.

AD PAGE: 129 **PROFILE:** 450

RESOURCE CENTER

01.08

INBOUND LOGISTICS WORKS FOR YOU!

For a specific response, contact these advertisers directly. Please tell them you saw their ad in *Inbound Logistics.*

For general questions about particular industry segments, use the card between pages 288-289.

For faster service, go online: inboundlogistics.com/rfp

Insurance

Avalon Risk Management, Inc.
www.avalonrisk.com 847-700-8100
Avalon Risk Management, Inc. began as a start-up operation in 1998. Today, it is one of the largest transportation focused insurance brokers in the United States. Thanks to its business partners, Avalon currently provides insurance and surety products, services and technology to one in four logistics providers.
AD PAGE: 59 PROFILE: 352

Intermodal

CSX Intermodal
www.csxi.com 800-288-8620
CSX Intermodal has the capabilities, expertise, and efficiency to make your supply chain stronger than ever. With ports and terminals throughout the eastern United States, CSX Intermodal's network connects more than 66 percent of the U.S. population.
AD PAGE: 51 PROFILE: 375

Lift Trucks

Landoll Corporation
www.landoll.com 785-562-5381
Landoll Corporation takes a narrow-minded view of forklift aisles – and that's a good thing. It specializes in lift truck solutions for narrow aisles, allowing users to maximize available storage.
AD PAGE: 250 PROFILE: 407

Kalmar Industries
www.kalmarind-northamerica.com 888-229-6300
Using an Ottawa Kalmar truck is always a good move. You get improved productivity, plus access to Ottawa's network of support resources that keep your trucks – and your business – moving.
AD PAGE: 249, 257 PROFILE: 402

TCM Lift Trucks
www.tcmusa.com 866-216-7840
Regardless of capacity, TCM's forklifts are reliable, powerful, and productive. And TCM's competitive pricing helps deliver maximum profitability to your bottom line.
AD PAGE: 273 PROFILE: 470

Logistics IT

Aankhen Inc.
www.aankhen.com 408-387-0083
Aankhen introduces Supply Chain 2.0 – next-generation supply chain services that integrate your financial, physical, and information supply chains. Read Aankhen's whitepaper to find out more.
AD PAGE: 303 PROFILE: 340

Cheetah Software Systems
www.cheetah.com 888-CHEETAH
Take the fastest route to success with Cheetah Software Systems. Cheetah software comes in easy-to-use customizable versions that any delivery, LTL, or 3PL company can use.
AD PAGE: 77 PROFILE: 368

Freightcenter
www.freightcenter.com 800-716-7608
Compare freight carriers, services, and rates for free instantly online or by phone. Freightcenter has negotiated contracts with all the major carriers and it passes those savings on to you.
AD PAGE: 37 PROFILE: 388

Freightgate
www.freightgate.com 714-799-2833
Aligning information with business objectives on a global scale is the name of the game at Freightgate. Bringing you new dimensions in e-logistics, Freightgate gives you a jump on the competition.
AD PAGE: 333 PROFILE: 389

IES Ltd.
www.iesltd.com 201-639-5000
No matter where in the world your goods are sourced, IES has a global supply chain software solution. IES offers software solutions for the future of freight.
AD PAGE: 27 PROFILE: 394

ILOG
www.logic-tools.com 888-265-4706
Discover ILOG's supply chain applications: LogicTools, a suite of optimization-based decision support solutions that complement and enhance existing ERP and APS solutions.
AD PAGE: 311 PROFILE: 395

RESOURCE CENTER

01.08

INBOUND LOGISTICS WORKS FOR YOU!

For a specific response, contact these advertisers directly. Please tell them you saw their ad in *Inbound Logistics.*

For general questions about particular industry segments, use the card between pages 288-289.

For faster service, go online: inboundlogistics.com/rfp

LOG-NET
www.log-net.com 732-758-6800

Want to be a supply chain superhero? LOG-NET version 6.0 combines the tools you need into one configurable application to provide an on-demand logistics planning, execution, and alerting system.

AD PAGE: 71 **PROFILE:** 413

Management Dynamics
www.managementdynamics.com 201-935-8588

Going global is anything but an easy move. Management Dynamics can help. Its global trade management solutions enable companies to optimize logistics decisions, reduce risks, and comply with worldwide import and export regulations.

AD PAGE: 17 **PROFILE:** 420

nVision Global
www.nvisionglobal.com 770-474-4122

nVision's iFocus offers an analytical tool featuring state-of-the-art global mapping. The iFocus Dashboard features drill-down technology and provides real-time alerts when critical issues arise or specific business conditions are met.

AD PAGE: 157 **PROFILE:** 433

RMI
www.railcarmgt.com 404-355-6734

For more than 25 years, RMI has provided innovative IT solutions for comprehensive rail management. RMI enables you to manage your rail shipments more effectively.

AD PAGE: 67 **PROFILE:** 456

SMC^3
www.smc3.com 800-845-8090

SMC^3's CzarLite software products help you make smarter transportation purchases by offering a pricing standard that both shippers and carriers can agree on.

AD PAGE: 155 **PROFILE:** 467

TransportGistics
www.transportgistics.com 631-567-4100

Ask TransportGistics about its routing guide, insource audit, and freight tracing solutions.

AD PAGE: 309 **PROFILE:** 476

UltraShipTMS
www.ultrashiptms.com 886-580-3380

Take control with a transportation management system built for end-to-end visibility and speed. Leave complex implementations and costly licensing fees behind. UltraShipTMS does everything the best way – your way.

AD PAGE: 115 **PROFILE:** 479

Materials Handling Equipment/Systems

Storage Solutions
www.storage-solutions.com 800-448-0899

Need one source for proven experience and quality products? Storage Solutions offers both, providing innovative solutions in 38 states, plus Mexico, Canada, and Puerto Rico. Storage Solutions is your partner for simplifying and streamlining warehouse needs.

AD PAGE: 280 **PROFILE:** 469

Westfalia Technologies
www.westfaliausa.com 800-673-2522

Looking to increase your warehouse efficiency? Westfalia offers fast, efficient, and reliable logistics, financial cost benefits, and a high-density warehouse design.

AD PAGE: 275 **PROFILE:** 491

Mobile Communications

CipherLab
www.cipherlab.com 888-300-9779

CipherLab's 9400 rugged Windows mobile PDA catches every detail—even signatures and hi-resolution pictures—while wireless keeps you connected to the world on a big, bright screen. You get all this capability in one hand, ready to start working now.

AD PAGE: 123

Motorola
www.motorola.com 800-722-6234

Motorola's Enterprise Mobility Solutions synchronize your entire supply chain and allow anytime visibility of your shipments around the world so you can capture, move, and manage data with real-time accuracy.

AD PAGE: 5 **PROFILE:** 426

Connect with the Penn State Smeal MBA and its top-ranked supply chain management program.

Pursue your MBA with the business school that knows supply chain management best. Practitioners and academics alike have ranked Penn State as the most respected logistics and supply chain education provider in the United States according to an assessment published in *Supply Chain Management Review*.

Experience state-of-the-art supply chain facilities. Access our Center for Supply Chain Research and its global network of corporate and government partners. Connect with an internationally ranked MBA curriculum that emphasizes Global Perspective, Total Business Focus, Functional Expertise, and Principled Leadership.

Explore all that Penn State and the Smeal College MBA have to offer at www.smeal.psu.edu/logistics/.

PENNSTATE
SMEAL College of Business

MBA EXECUTIVE MBA UNDERGRADUATE EXECUTIVE PROGRAMS PH. D. THE RESEARCH CENTERS AT SMEAL

RESOURCE CENTER 01.08

INBOUND LOGISTICS WORKS FOR YOU!

For a specific response, contact these advertisers directly. Please tell them you saw their ad in *Inbound Logistics.*

For general questions about particular industry segments, use the card between pages 288-289.

For faster service, go online: inboundlogistics.com/rfp

PeopleNet
www.peoplenetonline.com 888-346-3486
Serving the unique and specific needs of fleets coast-to-coast and throughout Canada, PeopleNet is known for the customer-driven innovation, unparalleled flexibility, leading-edge technology, and proactive customer care that gives fleets a real business edge.
AD PAGE: 31 **PROFILE:** 445

Verizon Wireless
www.verizonwireless.com/distribution 800-VZW-4BIZ
Verizon Wireless works with you and your existing systems to make your distribution company more effective.
AD PAGE: 11

Ocean Freight

Atlantic Container Lines
www.aclcargo.com 800-ACL-1235
For more than 30 years, ACL's pioneering spirit has made it a leader in North Atlantic Trade and one of the most respected names in ocean transportation.
AD PAGE: 65 **PROFILE:** 350

COSCO Container Lines Americas
www.cosco-usa.com 800-242-7354
With the congestion-free port of Prince Rupert and the dedicated CN rail service to many North American points, COSCO will help your ROI by expediting the transportation of goods in your supply chain.
AD PAGE: 189 **PROFILE:** 372

Hyundai Merchant Marine
www.hmm21.com 972-501-1100
Your product line deserves the best; come grow your business with Hyundai Merchant Marine's worldwide global network of quality transportation services.
AD PAGE: 331 **PROFILE:** 393

Matson
www.matson.com 800-4-MATSON
Matson's China shipping service from its Long Beach terminal serves only Matson ships, and your cargo gets first priority on every voyage. What's more, with Matson's advanced tracking system, you get complete visibility of your cargo from receipt to destination.
AD PAGE: 103 **PROFILE:** 422

Mediterranean Shipping Company
www.mscgva.ch 212-764-8592
Mediterranean Shipping Company, the second-largest ocean container carrier in the world, grows by leaps and bounds with new vessels, new containers, expanded ports of call, terminal operations, inland depots, information technology, creative logistics planning, and always competitive rates.
AD PAGE: 193 **PROFILE:** 423

MOL
www.molpower.com 800-OK-GATOR
By offering a wide range of service options, MOL has the flexibility to respond quickly to global market forces in multiple locations and maintain the production and delivery schedules of increasingly complex, multi-sourced supply chains.
AD PAGE: 15 **PROFILE:** 425

Orient Overseas Container Line (OOCL)
www.oocl.com 888-388-6625
Backed by sophisticated information systems and more than 35 years of experience in the container transport and logistics business, OOCL is your vital link to world trade.
AD PAGE: 191 **PROFILE:** 437

Seaboard Marine
www.seaboardmarine.com 305-863-4444
Seaboard Marine's commitment to building strong partnerships ensures that your cargo gets the best service available.
AD PAGE: 73 **PROFILE:** 464

UASC
www.uasc.net 800-G01-UASC
UASC brings southern hospitality to liner shipping; call its Savannah-based national booking office for more information. You'll experience the difference.
AD PAGE: 283 **PROFILE:** 482

RESOURCE CENTER

01.08

INBOUND LOGISTICS WORKS FOR YOU!

For a specific response, contact these advertisers directly. Please tell them you saw their ad in *Inbound Logistics*.

For general questions about particular industry segments, use the card between pages 288-289.

For faster service, go online: inboundlogistics.com/rfp

Ports

Port Everglades

www.broward.org/port 800-421-0188

At Port Everglades, cargo moves faster–in faster, and out faster, with no stop-and-go traffic. Help your cargo reach the finish line faster by shipping with Port Everglades.

AD PAGE: 231 **PROFILE:** 447

Port of Galveston

www.portofgalveston.com 409-766-6119

Located less than one hour's drive from downtown Houston, the Port of Galveston offers a wealth of resources: ship repair facilities; a short-line port terminal railway; an export grain elevator; and facilities to handle all types of cargo.

AD PAGE: 268, 328 **PROFILE:** 449

Printers/RFID

SATO

www.satoamerica.com 704-644-1650

Today's inventory management challenges require creative solutions. SATO helps you achieve greater productivity and performance with its new GL4e line of thermal printers.

AD PAGE: 269 **PROFILE:** 463

Rail Advocacy

Association of American Railroads

www.freightrailworks.org 202-639-2100

This year, America's major freight railroads will invest a record $10 billion in rail infrastructure, equipment, and innovation. Freight rail can move a ton of freight 423 miles on one gallon of fuel. That means smart energy savings for America. America's freight railroads work hard for you every day.

AD PAGE: 289

Consumers for Rail Equity

www.railcure.org 202-298-1844

Consumers United for Rail Equity (CURE) is a coalition of freight rail customers seeking changes in federal law and policy that would require railroads to provide more competitive pricing and reliable service. CURE's goal is to hold railroads accountable to their customers and the public.

AD PAGE: 210

Real Estate Logistics/Site Selection

The Allen Group

www.allengroup.com 858-764-6800

The Allen Group's master-planned logistics parks are located where you need to be to reach U.S. population centers–near ports, major transportation and trade corridors, and rail/intermodal infrastructure points.

AD PAGE: 142 **PROFILE:** 345

Big Industrial

www.willrogersbusinesspark.com 405-745-7444

At the cross-section of I-40 and I-35, the new Will Rogers Business Park offers more than two million square feet suitable for warehouse, distribution, or manufacturing facilities.

AD PAGE: 219, 240 **PROFILE:** 355

Binswanger

www.binswanger.com/hanahan 419-882-1961

Binswanger delivers global real estate solutions, including its newest facilities in Hanahan, S.C. - two warehouse and distribution centers, each offering more than 300,000 square feet of space. Contact Binswanger for your real estate logistics needs.

AD PAGE: 72

Burr and Temkin

www.burrtemkin.com 800-778-2303

Burr and Temkin offers a compact, national team of elite real estate professionals dedicated exclusively to the transportation industry. Call Burr and Temkin to put America's best team on your side.

AD PAGE: 215 **PROFILE:** 358

CenterPoint Properties

www.centerpoint-prop.com 630-586-8000

Totaling nearly 2.5 million square feet, CenterPoint's newest Import Distribution Center is an ideal location for users needing a direct connection to Chicago from West Coast ports.

AD PAGE: 213 **PROFILE:** 366

RESOURCE CENTER

01.08

INBOUND LOGISTICS WORKS FOR YOU!

For a specific response, contact these advertisers directly. Please tell them you saw their ad in *Inbound Logistics.*

For general questions about particular industry segments, use the card between pages 288-289.

For faster service, go online: inboundlogistics.com/rfp

FINSA
www.finsa.net 877-314-6950

With the largest leased portfolio in Latin America, FINSA offers strategic geographical locations in Mexico, where a qualified labor force and low operational costs optimize your logistics operations.

AD PAGE: 198 PROFILE: 383

Greater Waco Chamber
www.wacochamber.com 254-752-6551

Greater Waco is on the I-35 corridor, halfway between Austin and Dallas-Fort Worth, Los Angeles and Miami, and about halfway from Mexico City to Toronto. When your goal is to get there fast, easier, and more efficiently, check out Greater Waco.

AD PAGE: 54 PROFILE: 391

Intramerica
www.intramerica.com.mx 52 (818) 153-6430

Intramerica provides strategic locations and excellent working environments in Mexico for more than 200 blue-chip companies.

AD PAGE: 334 PROFILE: 398

Joplin Area Chamber of Commerce
www.joplincc.com 417-624-4150

Wondering where to put that new warehouse, cross-dock, manufacturing facility, or distribution center? Why not in the heart of America – Joplin, Mo. – where you'll find great road, rail, and air access, plus a business community eager to help you succeed.

AD PAGE: 217 PROFILE: 401

Louisiana Economic Development
www.louisianaforward.com 225-342-4319

All six Class I railroads converge at Louisiana, which also includes six interstate highways, the largest port system in the world, and commercial airports that can accommodate any size aircraft.

AD PAGE: 69 PROFILE: 414

Nebraska Public Power District
sites.nppd.com 800-282-6773

Looking for comprehensive business development information on Nebraska? Your search ends at sites.nppd.com, a site to see.

AD PAGE: 325 PROFILE: 429

North Carolina Global TransPark
www.ncgtp.com 252-523-1351

Located close to major East Coast markets, North Carolina Global TransPark offers an on-site airport with airfreight facilities and the state's longest runway. There's also the 33,000-square-foot TransPark Center, a meeting and training facility at the heart of the complex.

AD PAGE: 220 PROFILE: 432

Prudential Financial
www.prei.com (52) 55 5093 2780

Looking for a team you can trust for real estate development in the Mexican logistics market? Look no further than Prudential Financial, specializing in acquisitions, build-to-suits, and development in Latin America.

AD PAGE: 201 PROFILE: 453

Verde Corporate Realty Services
www.verderealty.com 915-225-3200

Verde Corporate Realty Services operates 12 million square feet of corporate facilities in 13 cities on the U.S.-Mexico Border with strategic land positions available for an additional 19 million square feet of manufacturing and logistics facilities.

AD PAGE: 50, 209 PROFILE: 486

Trucking

Carlile Transportation Systems
www.carlile.biz 253-874-2633

With routes through Canada and the Port of Tacoma, Carlile knows how to move your cargo to and from Alaska, or anywhere in North America.

AD PAGE: 229 PROFILE: 363

RESOURCE CENTER

01.08

INBOUND LOGISTICS WORKS FOR YOU!

For a specific response, contact these advertisers directly. Please tell them you saw their ad in *Inbound Logistics*.

For general questions about particular industry segments, use the card between pages 288-289.

For faster service, go online: inboundlogistics.com/rfp

■ Covenant Transport

www.covenanttransport.com 800-974-8332

Covenant Transport's regional, dedicated, temperature-controlled, and expedited long-haul services are ready to run for you. Whatever your shipping needs are, Covenant fits the bill.

AD PAGE: 2, 3 **PROFILE: 373**

■ Jevic

www.jevic.com 888-GO-JEVIC

Jevic offers the best of both worlds – the size and scale of a major LTL carrier with the accessibility and customer focus of a niche carrier. Ship regionally or multi-regionally, knowing that your shipment will arrive on time and intact, and still enjoy responsive customer service.

AD PAGE: 167 **PROFILE: 400**

■ Old Dominion

www.odfl.com 336-889-5000

Old Dominion's full range of products and services offers solutions you can count on for domestic, global, and expedited transportation.

AD PAGE: 35 **PROFILE: 435**

■ Saia

www.saiaxg.com 800-765-7242

Most LTL carriers can guarantee on-time delivery. Saia's Xtreme Guarantee gives you six guarantees in one. They cover what you care about most, delivering confidence from start to finish.

AD PAGE: 163 **PROFILE: 461**

■ Standard Forwarding Company

www.standardforwarding.com 877-744-7783

Make shipping excellence your standard with Standard Forwarding Company. Since 1934, Standard has offered reliable overnight delivery, excellent rates, online tracking, and 99-percent on-time service.

AD PAGE: 254 **PROFILE: 468**

■ U.S. Xpress Enterprises

www.usxpress.com 800-251-6291

U.S. Xpress offers all the transportation tools you need. From its award-winning dedicated contract carriage to multimodal rail service, U.S. Xpress is committed to meeting your transportation demands.

AD PAGE: 165 **PROFILE: 478**

■ Mayflower Transit

www.mayflower.com 800-299-1700

No matter what you are shipping, call Mayflower for guaranteed on-time delivery service. With Mayflower's guarantee, your shipment arrives when promised, or you receive a refund of 25 percent of the line-haul transportation.

AD PAGE: 145 **PROFILE: 480**

■ United Van Lines

www.unitedvanlines.com 800-299-1700

Need on-time service for your trade show, high-value products, or other special commodities? United Van Lines has got you covered. United offers an on-time, day-specific delivery guarantee.

AD PAGE: 151 **PROFILE: 481**

■ UPS Freight

www.upsfreight.com 800-333-7400

The same reasons you choose UPS for your small packages are now the reasons to choose UPS Freight for your LTL shipments. That means the reliability and tracking you're used to, plus a new on-time guarantee. It's not just freight, it's UPS Freight.

AD PAGE: Cover 4 **PROFILE: 484**

Warehousing

■ PSS Warehousing & Transportation

www.pssdistribution.com 732-274-1333

PSS offers a world-class network of strategically located distribution centers so you can position inventory within minutes of your clients' doors.

AD PAGE: 57 **PROFILE: 454**

■ Warehouse Specialists Inc.

www.wsinc.com 800-999-2545

For more than 40 years, WSI has helped customers succeed by consistently delivering on its commitment to Condition, Count, and Time – ensuring that products are delivered accurately, timely and soundly.

AD PAGE: 55 **PROFILE: 489**

CALENDAR

YOUR LOGISTICS DATEBOOK

March 9-11, 2008, International Warehouse Logistics Association Convention and Expo, Palm Springs, Calif. Speakers include Roger Dawson, author of *Secrets of Power Negotiating*, adapting his book's message for the warehousing business, and Hans Hickler, CEO of DHL USA, addressing how differentiated service culture drives market share in logistics.

800-525-0165
www.iwla.com

March 16-18, 2008, AirCargo 2008, Orlando, Fla. The Air and Expedited Motor Carriers Association's fifth-annual conference features 100 service provider exhibitors, and sessions on branding, security, and operations.

703-361-5208
www.aemca.org

April 7-10, 2008, SYSPRO PragmaVision 2008 End-User Conference, Orlando, Fla. SYSPRO users will learn about new functionality added to the SYSPRO product, which controls business operations planning and management, and discover how to better use the system to make the most of enhancements.

714-437-1000
www.syspro.com

April 20-23, 2008, Navis World 2008, San Francisco, Calif. Leading marine terminal operators, inland logistics managers, shipping line executives, and industry analysts will exchange ideas and learn about emerging supply chain technologies. Navis World 2008 focuses on the most pressing issues facing today's supply chain operations, including supply chain visibility and integration, key industry trends such as globalization, and ports and terminals of the future.

510-427-4572
www.navis.com

April 21-24, 2008, NA 2008, Cleveland, Ohio. At this event sponsored by the Material Handling Industry of America, attendees will see and operate the best and newest manufacturing, distribution, and IT solutions; learn how to successfully implement sustainable solutions into manufacturing and distribution operations while cutting costs and reducing risks; and attend education sessions led by industry experts.

704-676-1190
www.nashow.com


UPS FREIGHT
GUARANTEED
RELIABILITY
TECHNOLOGY
GUARANTEE
RELIABILITY
TECHNOLOGY
GUARANTEE
The same reasons you choose UPS for your small packages are now the reasons to choose UPS Freight for your LTL shipments. That means the reliability and tracking you're used to. Plus a new, on-time guarantee. It's not just freight, it's UPS Freight.
Find out more at upsfreight.com
WHAT CAN BROWN DO FOR YOU?®
© 2007 United Parcel Service of America, Inc. UPS, the UPS brandmark, and the color brown are registered trademarks of United Parcel Service of America, Inc. All rights reserved. Avery, Marks-A-Lot, the Crown Cap Design, and all other Avery brands are trademarks of, and used here under license from, Avery Dennison Corporation.
On-time guarantee applies to customers whose shipments are rated from the current UPGF 560 base rate tariff only. See Rules Tariff for applicable terms, conditions, restrictions and remedies.