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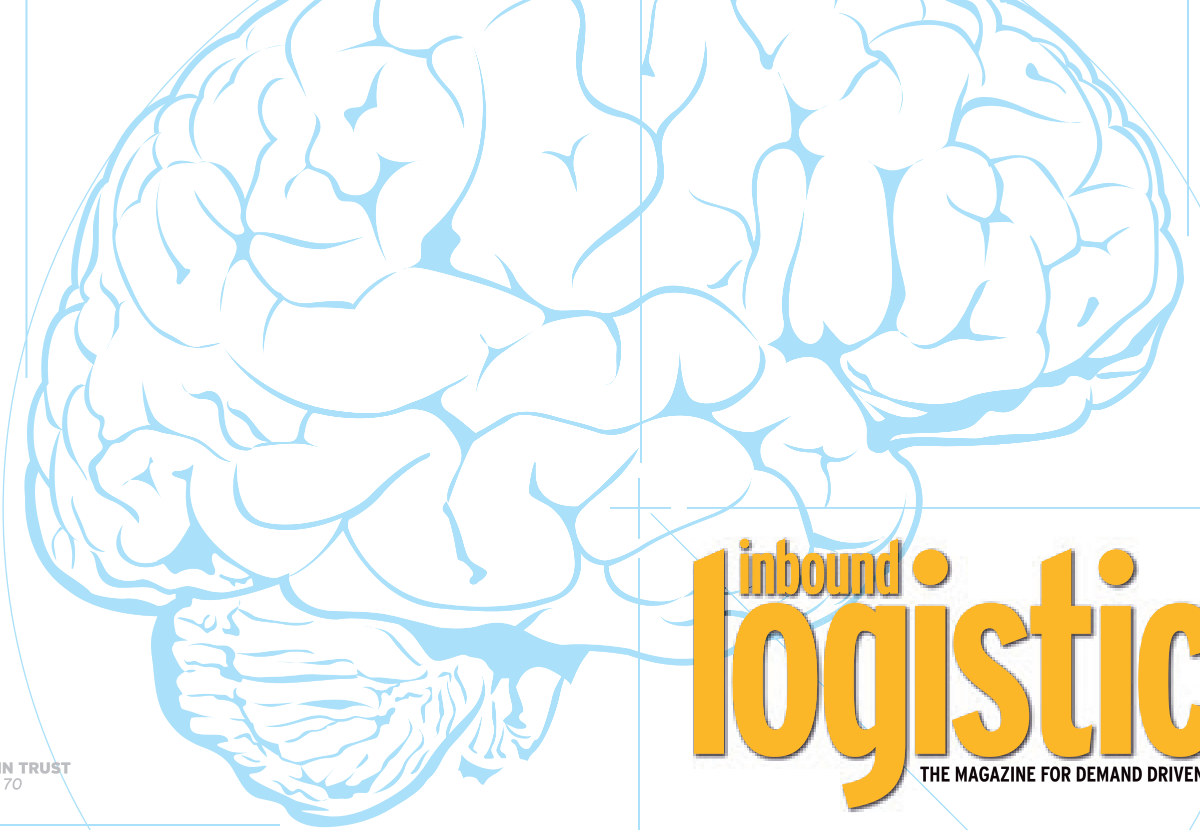

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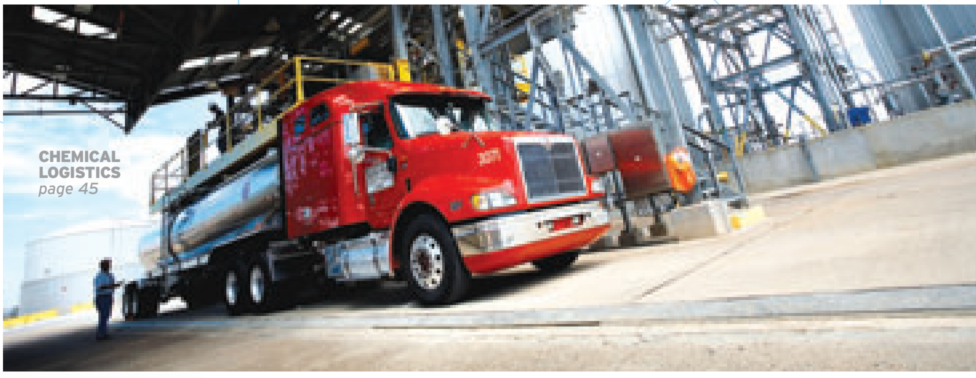

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CHECKINGIN

by Keith Biondo | **Publisher**

Wrong Street Journal?

A recent *Wall St. Journal* article, "Clarity is Missing Link in Supply Chain" (*May 18, 2009*) wrongly defines just-in-time (a small and strictly defined subset of demand-driven logistics), then concludes that practicing JIT in a recession makes things worse.

The article opens with the CEO of chip designer Zoran Corp., Sunnyvale, Calif., wondering why his market collapsed so fast. The *WSJ* offers this answer: "The world's complex 'just-in-time' manufacturing supply chains are making it increasingly tough for Zoran, and any other single link in the chain, to know what's going on just a few links away." Visibility into demand is what makes pull manufacturing and demand-driven logistics work. If Zoran was lacking visibility, it was not running JIT, or demand-driven logistics, for that matter.

The next example in the article examines a machine manufacturer for the electronics industry: "'We're still not sure what happened,' says machine shop owner Angelo Grestoni. He is many steps away from Zoran on the chain, but his clients, too, evaporated around the same time." Grestoni is now holding millions of dollars of inventory he can't sell, and paying storage fees on it.

Nobody wants to sit on inventory. During our last recession, Cisco Systems had to write off $2.25 billion in useless inventory. The company vowed that would never happen again. The solution? A company-wide commitment to demand-driven logistics, the exact opposite perspective of the *WSJ* article.

Then there's this from the retail demand point: "In March 2009, Best Buy Co. said it could have sold more electronics equipment in the three months ended Feb. 28, but its suppliers' deep cuts made it tough to keep shelves stocked. Suppliers 'all decided to build a lot less,' says Best Buy merchandising chief Michael Vitelli."

When suppliers direct production based not on demand signals, but on what they decide, that is not demand-driven logistics, supply chain management, or what the *WSJ* calls JIT. Zoran's CEO added that there was a lot of guessing going on, with "everybody under-betting." That's fear, not JIT. Perhaps a better headline for this article would be "Fear Can Foul Up Any Supply Chain."

That the *WSJ* is so off the mark with its understanding of JIT is inexplicable, given the collective business intelligence available to anyone with a working Web browser. Nobody is perfect, but what makes this misunderstanding unforgivable is that the *WSJ*'s stated negative impact applied to a broad range of demand-driven practitioners (including one in retail supply chain management). It does harm to the tens of thousands of logistics practitioners who struggle to better align demand to supply in order to scale company resources appropriately in good times and bad.

I shudder to think how those efforts might be damaged by a well-meaning but under-informed CEO reading the *WSJ* article and deciding that demand-driven logistics is the wrong way to go in a down economy–when the exact opposite is true. ■

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STAFF

PUBLISHER Keith G. Biondo *publisher@inboundlogistics.com*

EDITOR Felecia J. Stratton *editor@inboundlogistics.com*

SENIOR ASSOCIATE EDITOR Joseph O'Reilly *joseph@inboundlogistics.com*

ASSOCIATE MANAGING EDITOR Catherine Harden *charden@inboundlogistics.com*

CONTRIBUTING EDITORS
William Atkinson • Dan Calabrese • Merrill Douglas
John Edwards • Lisa Harrington • Robert Malone
Dan McCue • Amy Roach Partridge • Deborah Ruriani

CREATIVE DIRECTOR Michael Murphy *mmurphy@inboundlogistics.com*

SENIOR DESIGNER Mary Brennan *mbrennan@inboundlogistics.com*

PRINT/WEB PRODUCTION MANAGER Shawn Kelloway *production@inboundlogistics.com*

PUBLICATION MANAGER Sonia Casiano *sonia@inboundlogistics.com*

CIRCULATION DIRECTOR Carolyn Smolin

SALES OFFICES

PUBLISHER: **Keith Biondo**
(212) 629-1560 • FAX: (212) 629-1565
publisher@inboundlogistics.com

WEST/MIDWEST/SOUTHWEST: **Harold L. Leddy**
(847) 446-8764 • FAX: (847) 446-7985
haroldleddy@inboundlogistics.com

Marshall Leddy
(763) 416-1980 • FAX: (763) 201-4010
marshall@inboundlogistics.com

MIDWEST/ECONOMIC DEVELOPMENT: **Jim Armstrong**
(815) 334-9945 • FAX: (815) 334-1920
jim@inboundlogistics.com

SOUTHEAST: **Gordon H. Harper**
(404) 350-0057 • FAX: (404) 355-2036
south@inboundlogistics.com

MOBILE, AL: **Peter Muller**
(251) 343-9308 • FAX: (251) 343-9308
petermuller@inboundlogistics.com

NORTHEAST: **Rachael Sprinz**
(212) 629-1560 • FAX: (212) 629-1565
rachael@inboundlogistics.com

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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.

DIALOG

LETTERS TO THE EDITO

Inbound Logistics is still fielding letters from readers who have a stake in the ongoing and increasingly divisive debate about carbon emissions legislation. Voices on both sides of the divide have expressed and shared their opinions about the virtues of a sustainable, carbon-less economic footprint; as well as the ramifications of holding U.S. business and labor to a different standard than the rest of the world.

This discourse is important, especially as Congress begins its due diligence vetting the proposed bill. At press time, “cap and trade” legislation successfully passed the House Energy and Commerce Committee in May. It now awaits further debate and voting as the proposal follows a course through other Congressional committees.

To share your perspective on cap and trade legislation, please email: *editor@inboundlogistics.com*

For another reader’s opinion, read on…

Don’t Put a Cap On It

You are 100-percent correct on cap and trade (*Checking In, March 2009*). It really should be called “cap and tax” to pay for something the rest of the world will not be paying.

This will affect everyone and all commercial trade in this country. It is just another means of taxation. Most people are uninformed and that is what President Obama’s administration is banking on. Thank you for carrying the true message.

William Germann, national transportation and logistics manager
Schuetz Container Systems

Debating Grating Freight Rates

I ran across Jim Butts’ *Brokering Change* guest editorial in *IL’s* February issue. First and foremost, the article is timely and astutely scribed. Knowing what it has been like to succeed in this industry, I congratulate you.

I come from a transportation family with deep roots going back to the days of government-regulated truck transportation, then deregulation. I can vividly recall many dinner table conversations about the Teamsters union and the effects of deregulation.

I’m confident that you would have addressed one more issue had you been given the editorial space: freight rates as they relate to self destruction and deterioration initiated and maintained by both asset- and non-asset-based transportation service providers.

Much of what we see going on in our industry today is self-inflicted. The current LTL market is perhaps the best case in point. Unfortunately, both asset- and non-asset-based transportation service providers are much to blame for the depressed pricing systems we see today.

I believe it is our brokers’ responsibility to maintain expected service levels with zero tolerance for service failures while remaining steadfastly committed to the freight rates we demand.

Unfortunately, we are consistently experiencing destructive rate slicing from brokers (and asset-based carriers) during a time when it’s crucial to maintain incredibly high levels of service that warrant acceptable compensation.

Jason R. Snavely, president
AIRO Logistics, Inc.

Top 100 Digital Addition

I am checking to see if you are planning on making available the Top 100 Logistics IT companies list as it was published in your April edition. I have used the decision support tool and found it very helpful. I was also hoping to be able to get the chart as it was published.

Tim Donnelly,
AVP supply chain solutions
Pacer Transportation Solutions, Inc.

EDITOR REPLIES: You can find links to the April 2009 digital edition, Logistics IT Decision Support Tool, and LIT RFP online at: www.inboundlogistics.com/lit.

Or download the Top 100 chart directly at: www.inboundlogistics.com/digital/top100lit_chart09.pdf

10TIPS

STEP-BY-STEP SOLUTIONS

by Deborah Catalano Ruriani

Optimizing Your Logistics Conference Attendance

If you are spending time and money to attend a logistics conference, you should get the most out of it. Plenty of people and exhibitors will be vying for your attention and you need a plan of attack. The idea is not just to view, but to engage. Kathleen Hedland, director of education and research for the Council of Supply Chain Management Professionals, offers her best tips for optimizing logistics conference attendance.

1 **Plan ahead.** Review the conference program in advance and choose the sessions you want to attend. Plan to arrive at each session before it fills up.

2 **Pack for your destination, but don't forget the environment inside the meeting venue.** Make sure you have shoes comfortable enough to walk in and clothing you can layer, as temperatures in meeting rooms can vary.

3 **Get to the registration desk a little earlier than you think you need to on the first day.** This will give you time to get your bearings within the conference facility. Go back to registration every time you have a question. They are there to help.

4 **Attend any special events for first-timers.** Other first-timers will be there, but so will conference and industry veterans who can provide tips, show you the ropes, and help you maximize the value of your conference experience. Sessions for first-timers are also where you can find out how to get involved as an association volunteer.

5 **Talk to everyone.** You can often gain some of the best information outside the sessions–in hallways or in the hotel lobby.

6 **Wear your name badge at all times, but introduce yourself to others as well.** Logistics people are extremely welcoming. The person standing next to you may be dealing with the same "burning issue" as you, or may have a solution. Not all the experts at the conference are behind a microphone.

7 **Engage with speakers.** Ask general questions in the session that will benefit everyone; follow up with speakers later to ask specific questions that will benefit you. Take their contact information and reach out after the conference–speakers are usually generous with their expertise if you've participated in their session.

8 **Visit the exhibition hall.** Even if you're not in the market for new products or services, the latest and greatest will often be on display. You can see what the future may look like in the logistics segment, explore new services and technologies for solving your problems, and get an idea of what your competition is (or is not) doing.

9 **Take advantage of built-in networking opportunities.** Conference organizers understand the benefits of networking. If you've come with a group, split up and meet new people. Nowhere else but at a logistics conference can you be in touch with so many peers so quickly and inexpensively.

10 **When you get home, take action.** Call those people you said you would contact, check on the products and services that intrigued you, and put what you've learned into action. Share those takeaways with your colleagues. Stay connected with industry associations to continue learning from the best and brightest in your field. ■


Sprint
WHERE WE COME IN

by Merrill Douglas

Little Goes a Long Way

For Elizabeth Little, success lies in the details. There's always a fresh piece of legislation moving through Congress, a revised rule, or a new security or safety requirement that affects the way companies ship goods across the border. "As the importer of record, I need to know what's currently happening with everything related to shipping," she says.

Little is senior manager of customs, U.S., for Reebok International in Canton, Mass. It's her job to stay on top of all details concerning import and export regulations and make sure the company applies them correctly.

Part of the Adidas Group, Reebok sells footwear, apparel, and sports gear around the world under the Reebok and Rockport brand names. Serving both the Reebok and Adidas divisions, Little is responsible for four areas.

First is the customs compliance team, which ensures that the company reports its merchandise properly for entry into the United States. Second, she oversees the export team, which prepares documentation for products that Reebok and Adidas ship from distribution centers in the United States to international markets. Third, at Foreign Trade Zones (FTZs) in Boston and Spartanburg, S.C., Little ensures that the company complies with federal rules for importing and re-exporting goods through these special facilities. Finally, she oversees Reebok's and Adidas's participation in the Customs-Trade Partnership Against Terrorism program.

Little learned the customs profession from the

A LITTLE BACKGROUND

NAME: **Elizabeth Little**

TITLE: Senior manager of customs, U.S., since 2007

COMPANY: Reebok International (part of the Adidas Group)

PREVIOUS EXPERIENCE: Director of import operations, Chadwick-Miller; import manager, New England Pottery

EDUCATION: B.S., business administration, Stonehill College, 2005

The Big Questions

What do you do when you're not at work?
I enjoy gardening, going to the beach, traveling, and cheering for the New England Patriots and Boston Bruins. When I can work it into my schedule, I volunteer as an English as a Second Language teacher.

Ideal dinner companion?
Edward Kennedy, senior senator from Massachusetts. I admire the years of dedicated service he has given our state, and his passion to improve our health care system.

What's in your carry-all bag?
I usually carry my day planner, a to-do list, the *Boston Globe*, and some snacks. I also carry work-related reading materials.

First Web site you check in the morning?
First, I scan my e-mail. I work with people in time zones all over the world, so if they're looking for an answer the same day, it's critical that I respond. I also check the U.S. Customs and Border Protection site to see what's happening worldwide.

Business motto?
Educate, engage, execute, excel, and then you enjoy.

If you didn't work in supply chain management, what would be your dream job?
Teaching children.

ground up, spending 27 years at Chadwick-Miller, a family-owned importer of general department store merchandise. She honed her expertise by reading, networking within the industry, and earning her customs broker's license.

In a field where the rules change constantly, Little continues to rely on networking and on reading all kinds of materials–newspapers, newsletters, Web sites–to keep up with the latest information.

For example, "I read the Federal Register notices to stay informed about new regulations," she says. "I have to understand the impact to the business and the departments they affect."

That flood of information is a challenge for anyone who works in customs. Little faced a more particular test in a former job as import manager at New England Pottery in Foxboro, Mass. As the supplier of pottery and planters grew through acquisitions, Little was tasked with bringing the import operations of four businesses, based in different parts of the country, under one umbrella.

"Each business used a separate customs broker and ocean forwarder," Little says. "I brought all the companies under one service contract, so we had better controls, opportunities to negotiate more favorable rates, and more visibility into the supply chain."

Customs compliance requires continuous, painstaking attention, but Little says it's a pleasure to work with her team at Reebok.

"As a member of the Adidas Group, I work for a global company in a great environment. Adidas offers its employees many opportunities to excel, improve themselves, and grow with the corporation," she says. "I find that rewarding and encouraging." ■

LOGISTICS **knowledgebase**©

By Doug Waggoner
CEO, Echo Global Logistics
312-676-5795 • info@echo.com

Measure Your Way to Exceeding C-Suite Expectations

With organizational performance demands at an unprecedented high, the C-Suite is scrutinizing every cost of doing business and looking for places to cut costs while enhancing customer service. Constantly changing corporate goals and the mandate to do more with less adds stress to heightened business goals. One thing is clear: Changes made to your business function need to yield long-term value to your organization's bottom-line.

Outsourcing transportation has proven to be a valuable way for companies to secure hard- and soft-cost bottom-line savings. Most transportation management providers work in partnership with shippers. But, outside of savings, how do you measure the value your service delivers? Is realizing percentage savings enough? Does "value" have the same meaning to you and your provider?

A true partner will understand your business and use your specific needs to create a customized approach with key performance indicators. Establishing important benchmarks is the first step to creating a mutually agreed upon set of measurements. Overall program goals and measurement intervals should be established as a collaborative effort between you and your service provider.

Ensuring that you and your transportation management partner share the business goals of Senior Management will allow your outsourced team to be in synch with organizational objectives. With open lines of communication, your transportation management team will be able to make improvements to process and procedures based on your needs, ultimately addressing the needs of your customer.

So with measurable goals in place and open lines of communication, how are these measurements reported? Are they objective? Are results delivered in a controlled environment, and do you have access to results on-demand?

Your transportation management partner should be able to provide real-time metrics on-demand and conduct periodic reviews with business analytics to support tactical and strategic decisions.

On-demand reporting allows your internal key players an instant view of program strengths and weaknesses. Armed with key performance indicator benchmarks and other data, you can make fast changes to processes that move you toward the goal of managing to the expectations of your Senior Management team.

In a true partnership, your provider will continually bring to the table data-driven suggestions and even program changes that will allow you to surpass your initial goals. Such suggestions should be reviewed on at least an annual, if not quarterly, basis to ensure cooperation between your internal transportation team and your outsourced provider's strategic goals.

At Echo, the Account Manager of each Enterprise account acts as the quarterback of the outsourced dedicated team. The Account Manager is responsible for keeping your business goals a top priority while at the same time evaluating analytics regarding supplier performance and overall transportation management program objectives. Keeping a close eye on your business goals allows the Echo Account Manager to create appropriate suggestions for the improvement of program efficiencies.

This transportation management professional has a specific skill set that ensures that the values of each client are upheld, concerns are addressed, and strategic initiatives are implemented. And, as always, these changes are defined, evaluated, and executed with thoughtful attention to your business needs.

Keeping your Account Manager aware of any changing business needs is the best way for him or her to remain your champion for transportation optimization. This team leader can use your business goals to shape optimization opportunities, including strategic changes to procurement, data management and tactical approaches to achieve your desired results.

When made privy to your business needs, the Echo Account Manager takes responsibility of ensuring you have the appropriate data and analytics to prove the transportation management program is working, or what changes need to be made to demonstrate value-driven results to your Senior Management team.

The real benefit of having a transportation management partner is the ability to help you achieve, if not exceed, the results so critical in today's marketplace. Doing more with less is a lot easier with a partner like Echo helping with the heavy lifting.

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TRENDS

Roadblock and Tackle

by Joseph O'Reilly

It has been a tough year for the trucking industry with empty stores, trailers, and gas tanks casting their lot against carriers and motor freight buyers alike. Shrinking budgets, expanding carbon emissions and fuel efficiency standards, and steady competition from rail/intermodal providers have similarly pushed truckers and shippers into a sustainability strata that augurs a cleaner and greener road to the future.

But are "green truck" huckstering legislators taking too much air out of an industry already plodding on threadbare treads?

States have been bandying about vehicle-per-mile tax legislation and toll road privatization to complement existing fuel tax revenues that fund much-needed infrastructure development.

Most recently, Jay Rockefeller (D-W. Va.) and Frank Lautenberg (D-N.J.) presented Congress with *The Federal Surface Transportation Policy and Planning Act of*

CONTINUED FROM PAGE 14

2009 (S. 1036), which aims to increase use of non-highway, intermodal freight up to 10 percent by 2020.

The senators argue the bill would help reduce motor vehicle miles traveled, carbon dioxide levels, and congestion, while also increasing the percentage of system-critical surface transportation assets in a state of good repair.

Rail advocates laud the legislation as a much-needed impetus for crafting a national transportation policy. But those on the other side of the road perceive a myopic agenda that does not account for the important role motor freight plays in the U.S. supply chain.

> "A simple act of Congress cannot overturn **a U.S. supply chain network that depends on the trucking industry** to move 70 percent of the nation's freight."
> **–Tim Lynch,** *Senior VP, ATA*

"A simple act of Congress cannot overturn an entire U.S. distribution and supply chain network that depends on the trucking industry to move 70 percent of the nation's freight," says Tim Lynch, senior vice president, American Trucking Associations (ATA).

ATA proposes that if Congress wants to look at minimizing commercial vehicle miles, it should consider the only effective means to do that: increasing truck equipment productivity.

"While reducing trucks may seem admirable, it's important to keep in mind that almost every mode utilizes a truck in some manner," adds Charles Clowdis, managing director of North America global commerce and transport for market analyst firm IHS Global Insight.

Truck-only lanes could come into play, as well as other measures that recognize the vital role truck transportation plays in the U.S. economy, Clowdis adds.

What You Can't See Can Hurt You

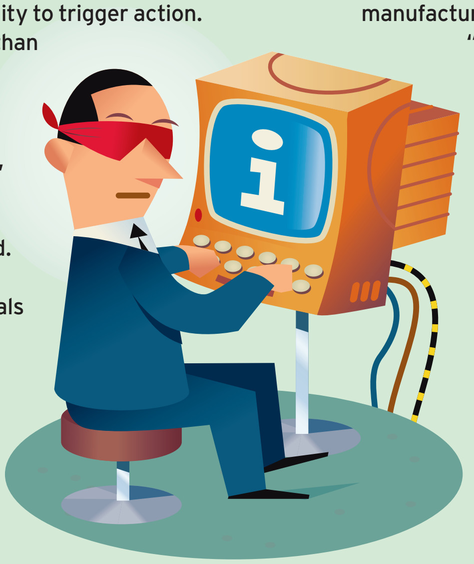
Do you know who your supplier's suppliers are? If not, you likely have some shared pain and company. A majority of shippers do not have access to real-time supply chain information, and even more lack automated data collection and consolidation systems, according to a recent survey by E2open, Redwood City, Calif., a provider of on-demand solutions, and Maynard, Mass.-based Gatepoint Research, a business-to-business research organization.

Four out of five survey respondents report having partial or no visibility into tier-two component suppliers, thus hampering their ability to make informed decisions and manage multi-tier supply chains cost effectively. Moreover, it's not just visibility that is lacking, but the ability to trigger action.

Gatepoint Research surveyed more than 1,100 executives from a broad range of industries—including high-end technology, telecommunications, equipment manufacturers, aerospace and defense, and industrial manufacturing—about their level of outsourced manufacturing and procurement activity and spend. Within the context of international outsourced manufacturing, the study reveals that as supply chains evolve into supply networks, brand owners require better systems to improve visibility and control, data quality, and buying efficiency through consolidated procurement.

While many companies plan to establish an integrated process control (IPC) to support "buy-sell" processes (buy directly from component suppliers and sell to the contract manufacturers/internal divisions), the ability to aggregate spending with one or more contract manufacturers and component suppliers is limited.

"The result is that operational inefficiencies remain rampant at a time when cost savings are critical," says Desikan Madhavnavur, vice president of product management for E2open. "Given the multi-tiered, multi-layered nature of today's demand-supply networks, legacy systems are often ill-equipped to seize the opportunity of reducing procurement cost and reduced component shortages at contract manufacturers.



"As a result, they miss important opportunities to improve buying efficiency and/or achieve potential tax savings from efficiently running buy-sell processes," he says.

While a company's procurement objective is to reduce costs by leveraging spend across contract manufacturers, the lack of supply chain visibility for those who have not implemented IPC frequently results in loss of control over cost management. Those who have implemented IPC often find it challenging to scale the buy-sell process manually to achieve significant business value.

WMS Market Holds Steady

In today's economy, small losses are big victories. Warehouse management solution vendors might agree. Despite a prolonged global recession, the worldwide market for warehouse management systems (WMS) shrank less than one percent in 2008, according to a new ARC Advisory Group study.

The Dedham, Mass.-based research firm forecasts a more substantial downturn in 2009, before the WMS market begins to grow again in 2010. Because of the two-year downturn, the market is only projected to grow by a compound annual growth rate of 2.2 percent through 2013. The market was $1,247 million in 2008 and is expected to reach $1,388 million in 2013.

While corporate walls are crumbling, demand for logistics technology inside the four walls remains stable, if slightly down.

"Many WMS suppliers told a similar story of woe about 2008," says Steve Banker, service director for supply chain management at ARC Advisory Group, and author of *Warehouse Management Systems Worldwide Outlook: Market Analysis and Forecast Through 2013.*

"The year started off strong. Selling cycles began to lengthen in the third quarter," he says. "But many suppliers, particularly mid-size and small vendors, were not able to close any new software deals in the fourth quarter."

Based on the global economic turmoil, it is not surprising that the WMS market shrank in 2008; what is remarkable is just how well the top five suppliers performed last year, reports Banker. All five of the top vendors grew, four posted double-digit revenue growth (year over year), and one reported a 35-percent spike.

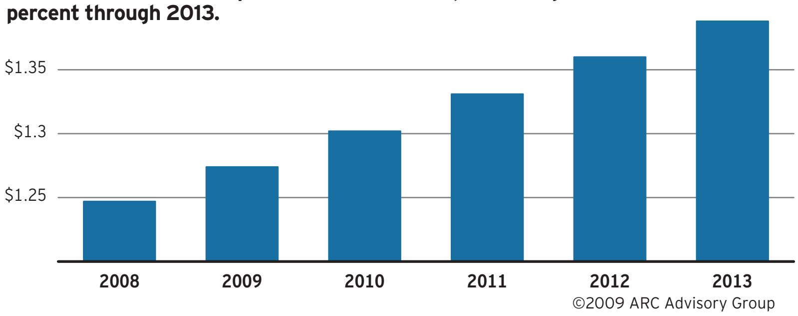
"I was surprised the WMS market shrank by only one percent in 2008," he notes. "However, when I looked at the data and realized that the top five suppliers account for slightly more than half of the total market based on revenues, that result became understandable. Without the strong year the top WMS vendors had, the market would have contracted far more severely."

WMS vendors have historically gained market share year over year, but that progression is bound to stagger. "Eventually, the market will reach a point where in order for a large supplier to gain market share, it will have to take it away from another major vendor," Banker says.

This survival tactic suggests further consolidation within the industry as top players expand through acquisition. Market contraction also raises important questions for buyers courting new solutions, placing greater weight on vetting the viability of small vendors, and discerning whether they have the resources and means to support and develop their products beyond initial rollout. ■

WMS Sales Inch Up ($ Millions)

Despite a languishing global economy, demand for warehouse management solutions remains steady, with market sales expected to grow at a rate of 2.2 percent through 2013.



Scrap Attack

Efforts at driving sustainability are touching all points of the supply chain as businesses dig up innovative ways to reduce and recycle waste. By example, the Georgia Ports Authority (GPA) has been recycling scrap metal for more than one decade. In 2008, it recycled 2.73 million pounds of scrap metal waste at its Garden City Terminal and Ocean Terminal, representing 32 percent of the port authority's total solid waste generated at Savannah last year.

"The GPA's scrap metal recycling efforts follow our initiative to recycle and reuse material whenever possible," says GPA Executive Director Doug J. Marchand. "From recycling concrete materials in berth upgrades to recycling scrap metal, the GPA strives to conduct port operations in an environmentally sensitive and responsible manner."

Most recently, a liquid bulk tank (*pictured below*) that was built in the late 1970s is being dismantled and removed from GPA's Garden City Terminal. Contractors will recycle scrap metal from the 15-million gallon tank and reuse concrete from the tank's base in GPA's terminal improvement projects.

TRASH TO CASH. 15 million rusty gallons worth of gold.

GLOBAL LOGISTICS

by Joseph O'Reilly

Operation Inbound

A demand-driven logistics strategy can help companies save considerable time and expense flowing product through the supply chain. It can also save lives.

Wayne, N.J.-based MAQUET Cardiovascular, a newly acquired division of German parent company MAQUET Medical Systems, recently expanded its relationship with third-party logistics provider Menlo Worldwide Logistics in Europe to manage inbound transportation for products manufactured in the United States.

MAQUET Cardiovascular develops and manufactures intra-aortic balloon pumps, and vascular grafts and patches, in its Fairfield and Mahwah, N.J., facilities. The company previously managed its own transportation and distribution to European customers, but following its acquisition, decided to pull U.S.-manufactured medical devices through MAQUET's European distribution base in Eersel, Netherlands.

MAQUET Cardiovascular, a New Jersey-based manufacturer of cardiovascular and vascular medical devices, has partnered with Menlo Logistics to drive inbound logistics fulfillment to European customers.

"Incorporating MAQUET Cardiovascular products into our operations at Eersel allows us to leverage our existing global supply chain, as well as Menlo's expertise and IT platform," says Rob Stoopman, managing director, MAQUET, Netherlands. "And we will achieve annual outbound transportation cost savings of 30 percent."

Under the expanded relationship with MAQUET, San Mateo, Calif.-based Menlo manages all inbound airfreight from the manufacturer's New Jersey production plants to its multi-client warehouse in Eersel. The partnership will ultimately include transportation management for outbound orders, using parcel delivery services to customer destinations in seven European countries.

By utilizing Menlo's multi-client warehouse management solution, MAQUET also gains management and labor infrastructure, requisite equipment and assets, a flexible contract commitment length, and an extensive global network of preconfigured warehouse operations.

CONTINUED FROM PAGE 19

Air Cargo Forecast: Cloudy

The global air cargo industry is beginning to show signs of improvement, but economic jetlag is likely to keep the industry in a holding pattern for the near future, according to recent data from the International Air Transport Association (IATA).

Air cargo demand dropped 21.7 percent in April 2009 compared with April of last year, but IATA reports that airfreight demand appears to have found a solid footing with a fifth consecutive month at more than 20 percent below previous year levels.

"We are not out of the woods yet," says Giovanni Bisignani, IATA's director general and CEO. "Freight remains at shockingly low levels."

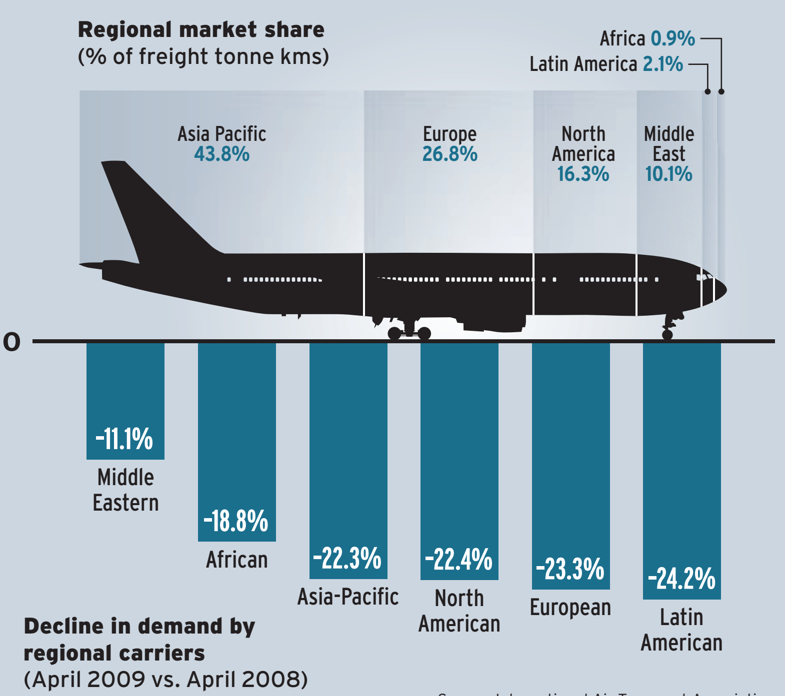
While the worst may be over, he adds, there are no signs that recovery is imminent. Business confidence is improving, but until current high inventory numbers adjust to more normal levels, airfreight volumes will likely bounce along the bottom.

With the challenges brought on by the global recession, flexibility has never been more important for the air transportation industry. But there's not enough flexibility as airlines are still constrained by old rules that restrict basic commercial freedoms such as access to markets and capital, Bisignani says.

"Much of the cost base remains out of our control—from volatile fuel prices to monopoly infrastructure charges," he adds. "And many governments simply don't understand the need for urgent change. We need a change in mindset. To manage through this ongoing crisis, every player in the air transport value chain must be prepared to drive change."

CHARTING GLOBAL AIR CARGO

It's wait and see for the global air cargo industry as the economy drags.



Source: International Air Transport Association

Next-Generation Messaging

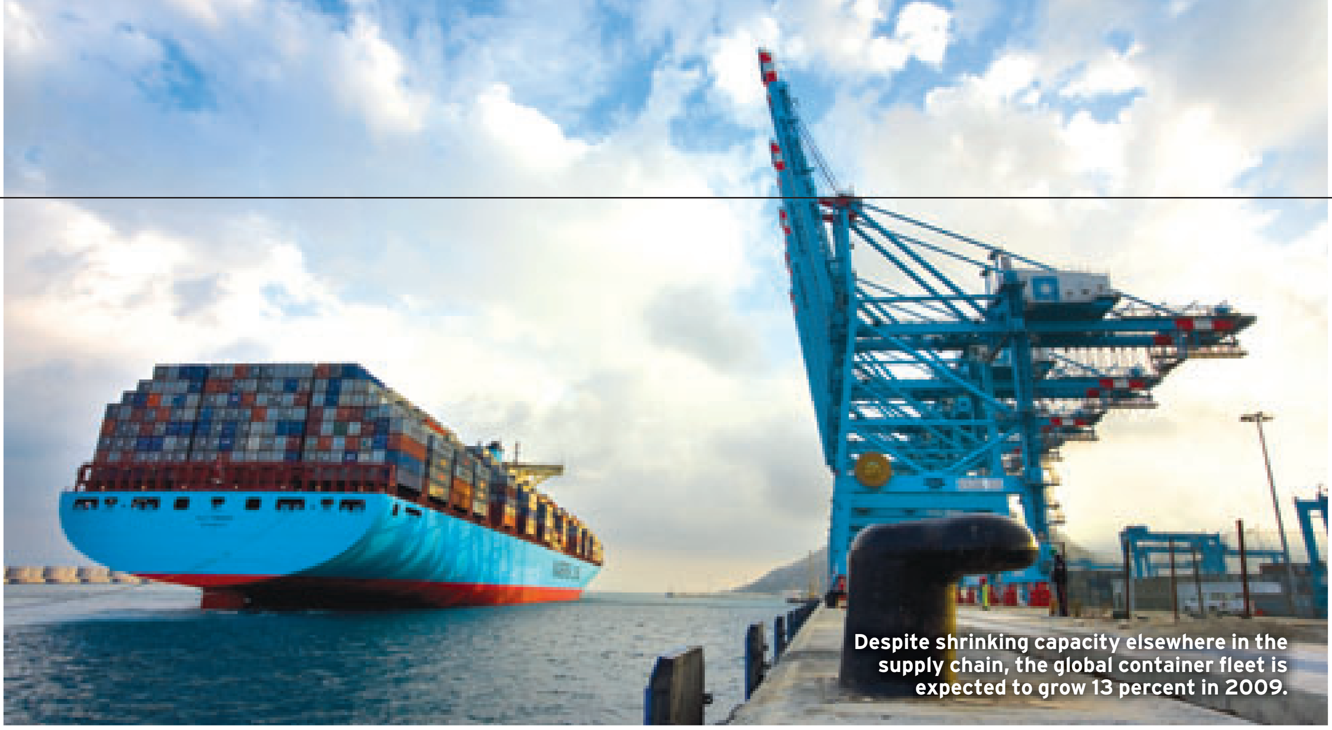
A proof of concept test between Solace Systems, a messaging middleware and content networking hardware provider; Japanese telephone carrier Softbank Telecom; and the city of Kobe, Japan, is making local parcel delivery more reliable. The project, funded by Japan's Ministry of Internal Affairs and Communication, aims to develop a next-generation logistics platform to increase parcel delivery efficiency.

Solace Systems' networking hardware helps shippers and service providers in Japan engineer instant messaging protocol to streamline parcel deliveries.

Softbank Telecom implemented the Ottawa, Canada-based company's messaging appliance as the foundation of the system. Identical codes are assigned to the sender, the package, and the recipient of a particular delivery. Solace's content routers then enable real-time communications among senders, delivery agents, and recipients, ensuring delivery to the appropriate destination.

The experimental system makes it possible for senders and/or recipients to update the desired place and time of delivery. In its pilot phase, the platform has significantly reduced the number of undeliverable packages.

"Everyone who has received a 'sorry we missed you' notice when awaiting a delivery knows the value of efficiency innovations," says Crispin Clarke, Solace's senior vice president, Asia and Latin America. "The Kobe City deployment also showed that next-generation messaging technologies can create time and fuel savings that could lead to significant cost reductions for logistics providers."



Despite shrinking capacity elsewhere in the supply chain, the global container fleet is expected to grow 13 percent in 2009.

Ships Gain, Despite Economic Pain

Even with over-capacity and under-valuated shipping rates, the world's ocean cargo fleet is expected to grow as deliveries and new shipbuilding orders pick up later this year, according to the *Shipbuilding Market Forecast for Container and Roll-On Roll-Off (Ro-Ro) Ships*, released by Lloyd's Register-Fairplay Research (LRF), an England-based maritime research company.

By any measure, the current picture for containership owners and operators is grim, with a severe imbalance in supply and demand exacerbating sluggish economic conditions worldwide. Some steamship lines are quoting spot rates as low as $250 to move a container from Hong Kong to Rotterdam, compared with $1,400 one year ago.

This imbalance has left ships high and dry and forced steamship lines to reassess sailing schedules and frequencies and shift assets to better match capacity with demand.

Nonetheless, the LRF Research report predicts an upturn in 2009 toward modest levels. New shipbuilding orders have not dropped precipitously, and thus far there has yet to be a rush to cancel existing orders at shipyards.

The global containership fleet stands at 4,671 ships with a total capacity of 12.4 million TEUs. It is expected to grow by 13 percent in 2009, as new ships ordered during the boom years are delivered to their owners. The growth rate will slow to 9.3 percent annually through 2013.

But what is telling is the size of new vessels coming on line. The growth rate will be highest for ships larger than 8,000 TEUs; they will achieve an average growth rate of 25 percent through 2013.

Normally, jettisoned ships help keep a fleet in balance as older vessels are scrapped to make room for new ones. In the case of the current containership market, however, a large percentage of tonnage is relatively new, and removals are only expected to erase some 904,000 TEUs from the fleet over the next five years. ■

Empires Strike Pact

Canada's colonial ties to Europe are well entrenched in its government and culture, but now that the United States' neighbor to the north has signed a bilateral open skies agreement with the European Union, its trade allegiance opens up new avenues for North American shippers to route cargo. The pact enables European carriers to operate direct flights to Canada from any European point, thereby deregulating cargo services and gradually removing restrictions on foreign investment.

"These agreements make the EU-Canada aviation market one of the most open in the world and a milestone for EU-Canada relations," says Antonio Tajani, European Commission vice president responsible for transport. "It is an important sign in the current economic turmoil that the EU and Canada are acting – not to close down their markets, but to remove barriers and improve links between people and businesses."

In March, the European Council (EC) unanimously endorsed the bilateral air transport agreement with Canada to replace a patchwork of separately held agreements with European states. The agreement "removes all restrictions on routes, prices, or the number of weekly flights between Canada and the EU. Other traffic rights will be liberalized gradually in parallel with the opening up of investment opportunities," reports the EC.

Moving forward, both governments expect even greater opportunities for bi-directional investment, where European Union nationals would be able to establish operations in Canada and "freely invest in Canadian airlines and vice versa," the EC says.

Joseph Tracy (*pictured*) is president of Travelers Inland Marine, (860) 277-1433, *jtracy@travelers.com*.
Scott Cornell is national program manager for Travelers Specialty Investigations Group, *scornell@travelers.com*

VIEWPOINT

by Joseph Tracy & Scott Cornell

Does Your Cargo Insurance Deliver?

Cargo theft amounts to $25 billion in direct merchandise losses each year, estimates the National Cargo Security Council. Full truckload theft in 2008 increased 13 percent over the prior year, reports FreightWatch International. Considering that 675,000 registered interstate motor carriers move 65 percent of the freight in the United States, the odds are good that many businesses may experience cargo theft at some point.

Statistics like these signal that corporate logistics managers should make thoughtful decisions about their insurance coverage and insist that the carriers they use do the same. A smart choice is to team up with an insurer based on the overall value it delivers, moving beyond the basic pledge to make payments when losses occur.

WHAT TO SHOP FOR

Someone in the market for a new vehicle typically will visit several car lots before making a purchase. If two dealers offer competitive pricing, but one throws in an extended warranty, roadside coverage, and undercoating, the buyer undoubtedly will take the offer that includes the free extras.

When it comes to insurance, however, decision makers often stop after conducting only rudimentary research. They may simply compare coverage terms, limits, and premiums without investigating any of the possible extras that an insurance company offers.

That can be a costly mistake. Insurance companies differ greatly in how they view and respond to customers. Businesses can choose an insurance provider who solely collects premiums and pays losses, or they can choose to be part of an independent agent and insurer's team, where the relationship goes beyond paying the claim and focuses on reducing risk.

To find an insurance company that will go the distance for you, look for:

1. Risk control services. Business managers juggle multiple priorities, but a thief has only one focus: stealing valuable goods. That puts a business at a disadvantage unless it can tap into resources that provide expertise to help with theft prevention. An insurer that offers risk control services gives businesses a trustworthy source of information.

Look for an insurer that will send cargo specialists to your sites to review procedures and training regarding cargo loss prevention and mitigation, with a specific focus on theft deterrence. This expertise means they can offer advice tailored to your operations. Ask about the insurer's knowledge of companies that specialize in cargo theft prevention devices, and confirm that the insurer has lab-tested these devices for effectiveness.

2. Specialty investigative units. All insurers employ investigators or contract with outside vendors for loss investigation across the broad span of insurance claims. A specialist who solely focuses on cargo theft, however, has an advantage that provides value to customers. These specialists study and understand the latest crime trends, and can spot patterns in the details of a loss that may solve a case or lead to more effective prevention measures. They have developed relationships with local law enforcement to move cargo theft investigations along quickly.

Find an insurer with an investigative team experienced in cargo theft and criminal conduct. They'll provide additional advice regarding the cargo industry. The insurer should deliver customer updates on local crime conditions, such as recent thefts, gang activity

Alaska
Hawaii
Puerto Rico
Guam/Saipan

CONTINUED FROM PAGE 22

in the area, new scams, and other techniques being utilized by thieves.

3. Underwriting expertise. Good insurance service begins with agents who know the expert underwriters for the cargo industry. Their knowledge is helpful in crafting coverage that addresses exposures related to the operations of truckers, logistics providers, warehousemen, or freight brokers and forwarders.

Look for an insurer that has experience with the type of contractual liability agreements that are part of a logistics manager's daily life. It's easier to review coverage for potential gaps when your agent or broker and the underwriter all understand the logistics segment and your role in it. Making sure there are no coverage gaps is only possible with knowledgeable assistance from your underwriter.

4. Specialized claims handling. An insurer's claims staff may be expert at reading the policy's fine print and filling out the paperwork that starts the payment on its way. But if they are handling workers compensation cases, automotive liability, and personal injury claims all on the same day, they may not have developed the specific knowledge and insight necessary to deliver the best service when cargo disappears.

Choose an insurer that routes all cargo theft claims to specialized claims professionals. They understand the complex liability exposures and contracts associated with shipping goods. They know the right questions to ask when a crime occurs and the best resources to tap for each claim.

All cargo losses are a hit on the balance sheet that few businesses can afford. Even with insurance coverage in place, businesses suffer from deductibles they must absorb, the unavoidable disruption claims cause, the lost goodwill of customers who do not have the revenue-generating goods they were expecting, and the impact that losses may have on insurance premiums in the future.

Good agents can help risk managers compare coverages and services. They can help decide which insurer can make a difference. A corporate risk manager wants an insurance carrier who is actively involved with reviewing risk management exposures and offers input as business operations and needs change.

This difference is vital, and the payoff is real. Getting the most for your insurance dollars can come long before a claim is made. ■

Andrew Kinder is director of
product marketing, supply chain, at Infor.
866-244-5479 • *andrew.kinder@infor.com*

GREEN LANDSCAPE

SUSTAINABILITY IN THE SUPPLY CHAIN

by Andrew Kinder

Sustainable Network Design: The Right Tools Make All the Difference

Until recently, supply chains were designed to deliver goods on time and at the lowest possible cost. This is still the focus for many companies, but as consumer pain increases due to rising energy costs, and environmental concerns such as global warming achieve greater awareness, forward-thinking businesses realize green issues are here to stay. These organizations are redesigning their supply chains to answer growing customer demand for reasonably priced, environmentally friendly solutions.

Companies can do more than just tap into green demand with supply chain design; they can also reduce costs. Businesses with best-in-class green supply chain designs have lowered supply costs, as well as overall logistics and transport costs, by two percent while answering the green challenge, according to an Aberdeen Group report.

Most companies, however, "are overwhelmingly unprepared to reap the environmental, social, and economic benefits earned by those who craft well-planned and well-executed sustainability initiatives," the report states. These businesses underutilize network design tools that provide visibility and control of supply chain operations and their ecological impacts.

EXAMINING THE OPTIONS

Using network design tools can result in improved efficiencies – including alternate sourcing, risk management, improved service levels, and modal shifts – throughout the supply chain. These tools allow companies to create inbound and outbound transportation and distribution networks that minimize carbon emissions by trading off sourcing decisions, transportation mode, and inventory policy.

By employing mathematical optimization and sophisticated cost and carbon dioxide emissions models to assess the various tradeoffs, the tools can help companies design an efficient, low-carbon supply chain.

Companies can realize almost immediate improvements by modeling carbon emissions with strategic network design. These applications track costs and emissions that can be influenced in the short to medium term so companies can quickly determine the most effective number of facility locations, sizes, and capacities to meet customer service goals while reducing their carbon footprint.

Businesses that use network design tools also benefit from dynamically planning where and when to make, buy, store, and move product given changing fuel costs. Through these models, companies quantify the cost, service, and carbon implications of each scenario and prepare themselves for the impact of change.

By analyzing the travel impact of goods on the environment, companies can capture big savings from more efficient transport which, in turn, means lower fuel expenditures and logistics operating costs.

INVENTORY COUNTS

With strategic network design, companies can gain from more environmentally friendly distribution plans. Inventory analysis and stocking calculations help create the optimal balance between service levels, inventory investment, and the carbon associated with different transportation modes and replenishment frequency.

Transitioning to a physical supply chain designed to reduce emissions takes more than a tool. It requires a strategic, long-term commitment and the flexibility to adapt as the market evolves. ■

Certified Screening and e-Freight Initiatives

CLEAR
FOR TAKEOFF

ED

by Merrill Douglas

Security and customs requirements impose major constraints on airfreight shipments. Two new programs aim to remove some of the obstacles.

WHEN YOU TRAVEL BY AIR, YOU CAN CHOOSE TO PACK LIGHT–board the plane with a carry-on, then grab it and go when you land. That's fine for passengers, but air cargo doesn't travel so easily. Thanks to security concerns and customs regulations, an air shipment always comes loaded with baggage.

Meeting numerous requirements costs time and money, both for shippers and for the forwarders and airlines that serve them. When something goes wrong–an agent needs to hand-inspect a pallet of cartons, a customs declaration gets lost, a data entry clerk transcribing figures from an air waybill makes a typo–goods sit idle at the airport.

Luckily for all concerned, the airfreight industry is working on programs such as the U.S. Transportation Safety Administration's (TSA) Certified Cargo Screening Program (CCSP) and the International Air Transport Association's (IATA) e-freight initiative to lighten the load for air cargo shippers and their service providers.

100-PERCENT SCREENING

The TSA created the Certified Cargo Screening Program to help the air cargo industry meet new security requirements contained in the 9/11 Commission Act of 2007, which mandated that by Feb. 3, 2009, 50 percent of all cargo carried on passenger aircraft in the United States had to go through a security screening. Since last October, the TSA has required 100-percent screening for all cargo carried on narrow-bodied passenger planes (planes with a single aisle), which account for 95 percent of all U.S. flights.

In August 2010, the 100-percent screening requirement will apply to all flights, including U.S.-bound flights originating in other countries. The federal government is still working out the partnership agreements required to apply that mandate to foreign airlines flying into the United States, says Dwayne Baird, a TSA spokesman.

Making the February deadline wasn't a great deal of trouble. "The first 50 percent was low-hanging fruit," said Brandon Fried, executive director of the Washington, D.C.-based Airforwarders Association, during an audio webinar on the new air cargo security mandates.

But many in the air cargo industry worry that the 100-percent screening

AA Cargo, KLM Cargo, SAS Cargo, and Dragonair are among the global airlines participating in IATA's move toward paperless documentation. By the end of 2009, the e-freight program will eliminate the need to send 16 paper documents with air cargo shipments – resulting in streamlined processes, improved reliability and speed, and lower costs.

mandate in 2010 could slow the flow of goods. The airlines are responsible for cargo screening, but they probably don't have enough capacity to handle the extra volume on their own.

"It would mean interfering with airport operations and potentially adding new facilities that might be necessary to screen cargo," says Christopher Bidwell, vice president, security and facilitation at Airports Council International (ACI)-North America.

Hoping to avoid space shortages and cargo logjams, TSA developed the CCSP, a voluntary program designed to shift at least some of the screening process upstream. Shippers, third-party logistics providers (3PLs), air forwarders, and independent screening services that want to take part in this program can apply to operate Certified Cargo Screening Facilities (CCSFs).

Cargo that is screened in these facilities and transported through a secure chain of custody doesn't need to stop at the airport for inspection, and is more likely to get loaded onto its intended flight and move promptly to its destination.

As of April 2009, TSA had certified about 282 companies as CCSFs, most of them freight forwarders. The additional 1,400 applicants on file at the time demonstrated that the balance of participation was shifting. "Approximately half of CCSF applicants are now shippers," Baird says.

CCSP is especially compelling for shippers and forwarders whose cargo could be harmed or delayed if it's screened at the airport, notably any company that shrink-wraps multiple pieces on a pallet.

The 9/11 Commission Act requires screening air cargo at the piece level. The X-ray and explosives detection systems currently available for use at airports were designed to screen passenger bags, and this equipment is too small to handle loaded pallets. The alternative is not pretty.

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COMMITTED TO CARGO

"Twenty-four separate boxes might have to be broken down, individually screened, then put back together," Bidwell explains.

CCSP shippers and forwarders can screen boxes before they build loads for shipping, averting the need to tear down pallets.

HARMFUL X-RAYS

Certain industries have more particular concerns. For example, X-rays can damage pharmaceutical products. So can improper handling of packages, which could occur if airline officials not familiar with the products inspect boxes manually, said Brad Elrod, senior manager, global logistics security for Pfizer Pharmaceuticals during the webinar.

"Because of the sensitivity of our products, and the regulations that surround them, we would much rather do the inspection ourselves," he said.

To satisfy the Food and Drug Administration's (FDA) requirements, pharmaceutical manufacturers already follow strict procedures when handling and transporting medications. The industry is working to synchronize FDA and TSA requirements so that one set of processes will satisfy both organizations.

Companies that transport perishables also are embracing the CCSP. Los Angeles-based Commodity Forwarders Inc. (CFI), which transports fruit, vegetables, fish, meat, flowers, and other perishables, has earned certification under the program in seven of its 12 offices, with plans to add four more.

"Perishables that get stuck in screening lines lose their value fast. No one eats a bad piece of fish," said Chris Connell, CFI's president, during the webinar.

While pharmaceutical manufacturers want to avoid exposing their products to X-ray machines and explosives detection technologies, they are the preferred solutions for perishables. These automated systems eliminate handling, which potentially can damage products.

But such technologies don't come cheap. "It can cost $30,000 to $50,000 to purchase an explosive trace detection machine, and up to $500,000 for an advanced technology X-ray machine," Fried says. Third parties that become certified will try to pass those costs along to their customers, although that's not always easy. "We're in a very competitive environment," he notes.

The good news for shippers who want to screen their own products is that they probably won't need those costly systems, unless they're receiving sealed boxes from suppliers. Shippers simply need to prove that from the time a product is manufactured to the time it's loaded on a plane, there is no opportunity to insert a terrorist device into the package.

"Shippers have to provide a sterile area for preparation of the shipment, and ensure that the people who are packing the boxes are security threat-assessed by the TSA," Fried says.

While cost figures heavily in a 3PL's or forwarder's business case for CCSF certification, shippers focus on a different factor: whether or not they want to become regulated.

To maintain the chain of custody, a shipper that operates a CCSF, then gives its freight to a forwarder, won't be able to choose just any partner. It will need to work with one that has qualified itself with the TSA to handle screened cargo.

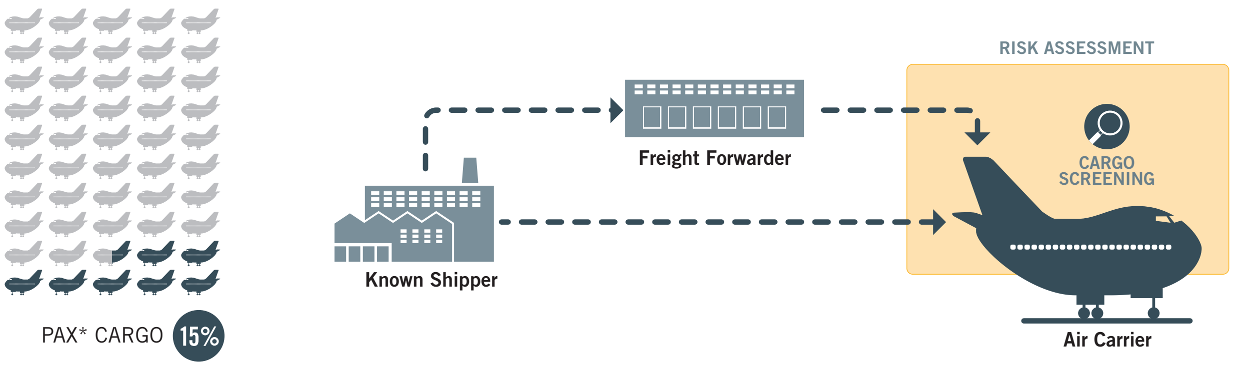
THE CAR WASH ALTERNATIVE

For shippers and forwarders who want to avoid the airport crunch but don't want to become certified screeners themselves, another option is emerging: the independent cargo screening facility (ICSF). Known as a "car wash," this could be a standalone business, a co-op formed by several smaller businesses, or a division within a larger company.

Current & Future Air Cargo Supply Chain

Air carriers currently screen the majority of cargo moving on passenger aircraft. In the future, however, screening will take place earlier, and at various points. Forwarders and shippers can voluntarily apply to be a CCSF, where cargo is screened before it is consolidated and sent to the airport. The CCSF must deliver screened cargo while maintaining a secure chain of custody.

TODAY



By August 2010, the Transportation Safety Administration will mandate 100-percent screening of cargo carried on all passenger aircraft flights, including U.S. bound flights originating in other countries.

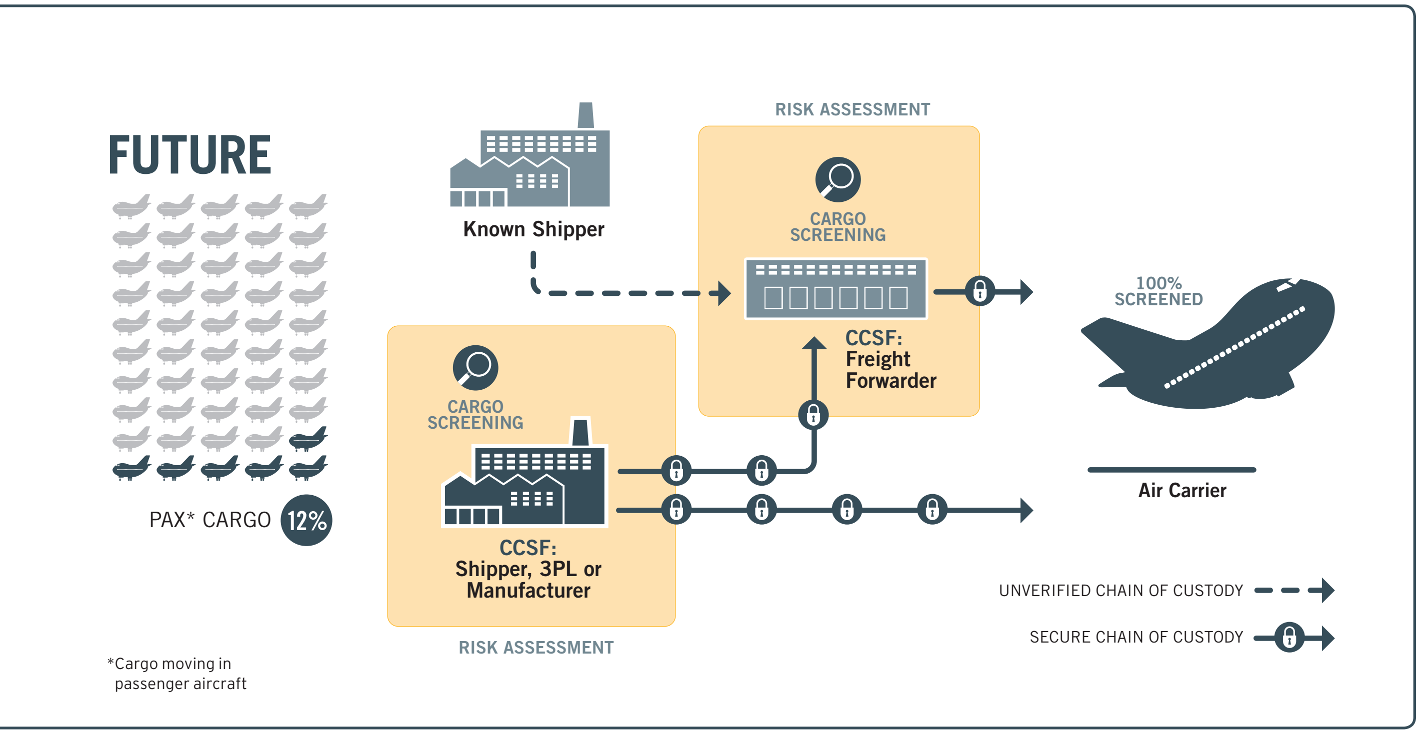
In one city where it's not a CCSF, for example, CFI is working with a transportation firm that handles hard freight and therefore is not a competitor. "It's helping us screen," Connell explained during the webinar.

Trucking companies that already serve multiple forwarders or shippers are well-positioned to provide this service, especially in smaller markets where no single shipper or forwarder has enough volume to justify doing its own screening.

Although shippers, forwarders, and others are taking on some of the screening burden themselves, the airlines also hope to boost their own capabilities to meet the 100-percent mandate in 2010. One important question is how soon the industry will see new screening technologies designed to handle loaded pallets rather than luggage.

"I worry about the lack of speed with which the technology is being approved to screen large shipments," said Dave Brooks, president of American Airlines Cargo, during the webinar. "Many technology applicants have products ready to test. The process seems to take forever."

Because Congress has mainly funded technologies for passenger baggage,



e-Freight Messages to be Defined by the End of 2009

1. Invoice
2. Packing List
3. Certificate of Origin
4. Letter of Instruction
5. Shipper's Dangerous Good Declaration
6. Export Goods Declaration
7. Customs Release Export
8. House Manifest
9. Master Air Waybill
10. House Waybill
11. Export Cargo Declaration
12. Flight Manifest
13. Transfer Manifest
14. Import Cargo Declaration
15. Import Goods Declaration
16. Customs Release Import

research and development on cargo screening has suffered. "Going forward, there's an opportunity to obtain grants specifically to develop certified screening technologies for large, palletized shipments," Bidwell says.

TONS OF PAPER

If security screening requirements impose a burden on air shipments, so do the piles of paper that usually accompany the freight. A typical air cargo shipment travels with as many as 30 paper documents. Taken together, these documents occupy enough space each year to fill 80 Boeing 747 freighters, according to IATA.

With an eye toward easing that paper burden, and moving cargo more efficiently, IATA has been working since 2004 on an initiative called e-freight. The program's goal is to replace many physical documents with electronic messages agreed upon globally by shippers, forwarders, carriers, and customs authorities. "Airlines around the world are trying to cut costs, and that's why they support this initiative," says Steve Lott, head of communications for IATA North America.

E-freight is part of a larger IATA program called Simplifying the Business, which previously developed standards for electronic passenger tickets. "Eliminating paper for cargo is a more difficult task," Lott says. "Passengers are issued one paper ticket, but cargo moves with 30 different documents."

The e-freight program has targeted 20 of those documents for elimination. Currently, IATA has 13 electronic documents ready, and expects to add three more by the end of 2009. *(See box above for complete list.)*

"We're not looking to eliminate all the documents at once," Lott says. IATA is focusing mainly on getting participants to use electronic versions of three documents: the master airway bill, the house waybill, and the house manifest.

Nor is IATA targeting all shipments initially. "We've started with general cargo, which is not specialized, doesn't transfer, and is not licensable," Lott says. For example, cargo that flies into New York from overseas but then is trucked in bond for customs clearance in Kansas City currently isn't eligible for e-freight.

Electronic messaging is not a new concept in air transportation. IATA previously developed a version of electronic data interchange (EDI) known as the Cargo Interchange Message Procedures (Cargo-IMP). E-freight builds on that earlier effort. "We're pushing air carriers to use that format," Lott says.

IATA has been modifying some of the Cargo-IMP messages – adding new fields, for example – to accommodate the needs of customs authorities in various countries.

Large service providers such as DHL Global Forwarding have been using electronic formats to transmit certain documents to air carriers since the 1990s. "We were transmitting a master bill level of information, which contained all the house bills beneath it," says Jay Brockington, manager, global XM and e-tools, for DHL Global Forwarding in New York. "That was all sent electronically as well as on paper."

But those transmissions represent just a fraction of what IATA's members are attempting now. The e-freight program seeks to get rid of a much longer paper trail – extending from the shipper through customs and on to the consignee – by replacing invoices, packing lists, customs documents, and numerous certificates with electronic messages. "This is very different because it starts with the shipper," says Holger Bilz, vice president of global airfreight, operations, quality, compliance and technology at DHL in Bonn, Germany. "The crucial point is that customs–on the export side and, especially, on the import side–is willing to clear shipments without hard copy documents."

The big challenge for e-freight has been getting customs authorities to agree on which paper documents they will forego, and to accept electronic messages in the same formats. While many customs authorities originally climbed on board with e-freight in principle, when they got into the details, they didn't agree on standards, Bilz says. Some decided they couldn't give up certain paper documents. Others offered to scrap several documents but wanted to replace them with a single new form.

IATA has resolved those problems to some extent. As of April 2009, e-freight was active at 49 airports in 19 countries. But as each new customs authority joins the program, officials there request special provisions until they realize the benefits of adhering to a single standard. "We will do e-freight in more countries, but it grows increasingly more complicated," says Bilz.

Within the United States, e-freight is active at John F. Kennedy International Airport in New York and Chicago O'Hare International Airport. IATA expects to add seven or eight more U.S. airports this year, including Los Angeles, San Francisco, Seattle, Dallas/Fort Worth, Atlanta, Miami, Boston, and possibly Washington Dulles.

Shippers who want to participate in e-freight by transmitting electronic invoices, packing lists, and certificates of origin need software to create those messages. They might develop the capability in-house or turn to technology vendors.

But until e-freight applies in more countries, and to more kinds of shipments, shippers will have to produce both paper documents and electronic messages. "When you run parallel processes, you don't save money," Bilz notes.

In the long run, though, all supply chain partners benefit, proponents say. IATA estimates that e-freight will save the airfreight industry as a whole between $3.1 and $4.9 billion per year, depending on how many participants adopt the system. Transmitting documents ahead of cargo will cut cycle time by an average of 24 hours. Replacing paper with electronic records also will increase accuracy because data has to be entered only once, and will help the environment by eliminating 7,800 tons of paper per year.

Moreover, "it reduces the need for document storage and the associated costs," says Brockington. Electronic records can be stored on a hard drive or other electronic devices.

Shippers also will benefit by seeing their cargo move faster. "There's less possibility of lost cargo due to missing documentation," says Lott. "And it improves the quality of service shippers will receive."

CCSP and e-freight are in their early stages. But proponents expect that both programs will help relieve air cargo of its excess baggage and keep it moving at optimum speed. ■

Air Cargo Perspectives 2009

Leading air cargo companies share their perceptions on important trends shaping the trajectory of today's global supply chain.

What goes up must come down–and the air cargo industry is flying circles as it waits for that maxim to reverse itself in this current economic lag.

Demand for expedited airfreight services has been muffled by efforts to reduce costs as fluctuating fuel prices and scant demand ground assets in other areas of the supply chain.

But globalization is a certainty and cargo needs to fly, so airlines, air cargo service providers, and airfreight shippers are making sure progress, in spite of external turbulence, by investing in technology, finding partners, and improving logistics and supply chain business processes as economic clouds slowly dissipate.

Inbound Logistics' Air Cargo Perspectives explores the challenges and opportunities shippers and service providers face in these dynamic times. Soliciting feedback from more than 50 airlines, airfreight forwarders, expeditors, and third-party logistics providers, our annual air cargo market overview provides an eye-over-the-sky look at how the industry is faring and where it is flying.

In concert with this perspective, *IL*'s Who's Who in Air Cargo (*page 40*) provides snapshots of companies that are taking airfreight shippers to new heights of innovation and collaboration. We present drill-down data on the types of services and capabilities these companies bring to the market in an effort to help shippers find partners paired to their unique needs.

FLYING UNDER THE RADAR

One thing is clear in an otherwise murky global forecast: the widespread economic malaise has been unequivocally democratic in its impact on airfreight service providers.

Soaring operational costs and slackening demand for airfreight services have struck asset-based and non-asset-based air cargo companies alike. Carriers operating their own fleets have been pressed to idle aircraft, mix and match cargo-specific and combi services to achieve higher load utilization factors, and concentrate on stronger performing markets.

Last summer's fuel surge gave carriers greater cause as they looked to offset maintenance expenses with other efficiencies and pass-along surcharges. Airfreight forwarders and third-party logistics service providers with core air cargo capabilities have had their own share of challenges finding business in a contracting, air-expense-averse economy, and expanding their portfolios with new services to counter unassailable market constraints.

Air cargo companies responding to *IL*'s market insight survey report a marked U-turn in sales growth over the past year. On average, companies witnessed sales drop 1.5 percent, with more respondents indicating break-even or lost sales (53 percent) than growth beyond five

percent (47 percent), compared to 87 percent in 2008.

Profit margins were equally dire, with one in two air cargo companies reporting no gains or a loss in profit. Last year, 79 percent of survey participants cited profits above five percent; this year only 44 percent indicated as much.

Cargo companies overwhelmingly point to the global economic downturn as the contributing factor for lackluster sales and profitability figures. For those that notched positive gains, customer focus was a common denominator–good or bad.

"Sales and profit growth are a result of improvements in service and capacity planning," one respondent reports. Another participant gained market share as weak suppliers could no longer meet service-level expectations.

Survey respondents indicate they are looking to counter volume attrition by finding new business. Collectively, air cargo companies grew their client base nearly four percent, with 50 percent growing their rosters by at least five percent; of those, one-quarter reported an up-tick of 10 percent or more.

Still, one-third of survey participants acknowledged no change in the number of customers and 17 percent lost business. "Our customer base experienced a slight decline due to industry consolidation and 'known shipper' requirements," reports one air cargo company.

Carriers have a captive, if cash-strapped audience, and are competing among themselves for business. This has increased pressure to pursue consolidation and alliances as airlines consider complementary partnerships in emerging and existing markets that may make them more competitive in the long run.

Meanwhile, third-party logistics service providers and airfreight forwarders are flying under each other's radars to tap growth opportunities with new customers. Non-asset-based logistics service providers have the "flexibility of diversity": 3PLs, with their full slate of service

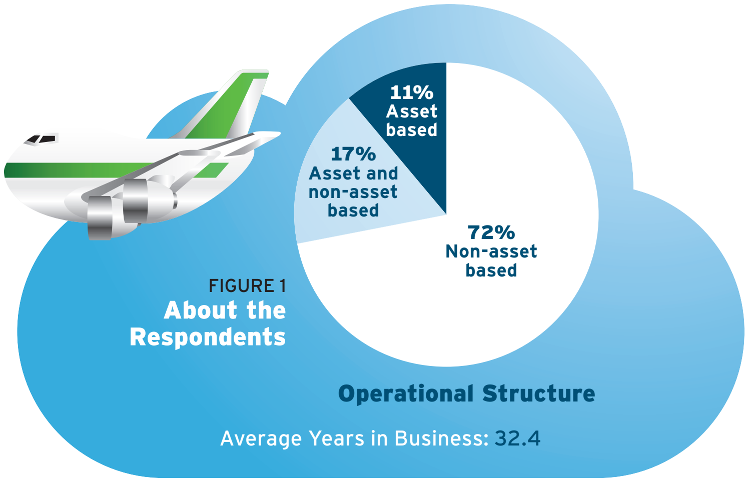


FIGURE 1
About the Respondents

and technology capabilities, are cross-selling through the supply chain to mine new opportunities. Forwarders, in turn, are expanding their operational expertise beyond air cargo handling to offer shippers a more complete solution.

Airlines are looking at ways to improve productivity by merging asset and capacity demand across cargo and passenger services. Many have shuffled service frequencies and idled or downsized aircraft where and when necessary to achieve better economies of scale and fuller payloads. To some degree, this has made it a more difficult sell for forwarders trying to match shrinking capacity and soaring rates with discretionary airfreight buyers.

AIRFREIGHT SERVICE: TOUCH AND GO

Simplifying the business and removing touches remain priorities for airfreight service providers, and many are leveraging technology to ease shipper apprehensions and cement their value proposition beyond cargo handling. Web-based tools such as real-time shipment tracking are the norm, with every surveyed company reporting these capabilities.

Online customs and import/export documentation (77 percent) and rate quote services (75 percent) are gaining in popularity as well. Survey respondents also cite increasing demand for and availability of purchase order management solutions, customized reporting, EDI, and E-mail alerts.

Technology penetration within the air cargo space is likely to spike considerably in the next few years with pressure from industry to apply green standards and reduce excess paper documentation. The International Air Transport Association's landmark e-freight program is still gathering support as it continues its global pilot phase (*see Cleared for Takeoff, pg. 28*), but many air cargo companies are already engaging online tools to reduce paperwork and increase efficiency.

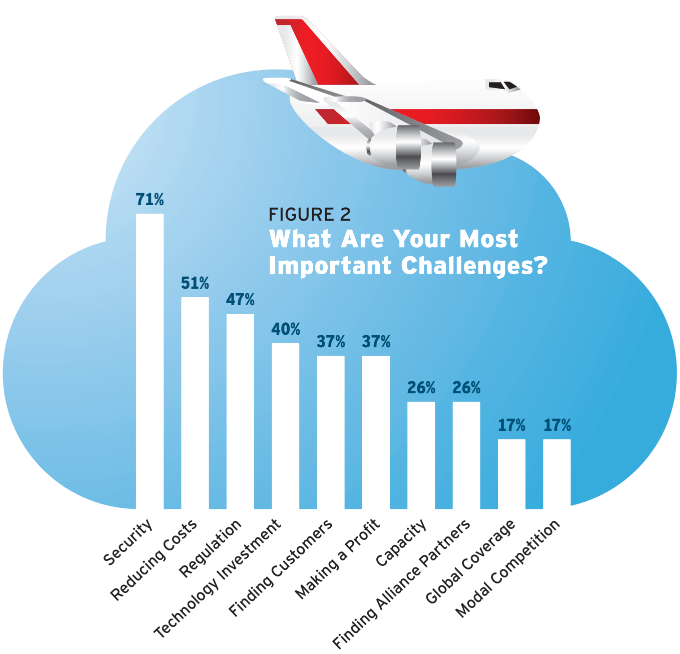


FIGURE 2
What Are Your Most Important Challenges?

In terms of services, moving cargo via air is specialized regardless of intent or content. Shippers expect proper packaging, handling care, customs paperwork, and security compliance, warranting a core suite of capabilities to meet those demands.

Heavy freight, next-flight-out, charter, and high-value shipment services are core airfreight offerings–more than 90 percent of companies offer these capabilities–closely followed by door-to-door (89 percent) and overnight (86 percent). Hazmat and perishable shipments require more specialized expertise, and 83 percent and 64 percent of air cargo respondents provide these types of services, respectively.

As is the nature with third-party logistics providers and freight forwarders that moonlight beyond their core operational pedigrees, many provide a cross-section of non-airfreight-specific services. Eighty-seven percent of surveyed companies operate as NVOCCs, 86 percent provide logistics and ocean freight forwarding services respectively, 72 percent assume the role of customs broker, and 69 percent act as consolidators.

AIR TRAFFIC CONTROLS

For asset-based carriers and expeditors, non-asset-based forwarders and 3PLs, core air cargo shippers, and airfreight-by-exception buyers, challenges are myriad and manifest given the nature of shipping by air.

In the post-Sept. 11 era, security remains the overwhelming priority for air cargo service providers (*see Figure 2*). Reducing costs (51 percent), regulation (47 percent), technology investment (40 percent), finding customers (37 percent), and making a profit (37 percent) round out other top concerns.

While security and regulatory protocol have gradually expanded in the legislative ether following Sept. 11, shippers are now beginning to feel the weight of emerging compliance requirements. The Transportation Security Administration's (TSA) 100-percent screening mandate for all cargo loaded on passenger flights is still on target for an August 2010 deadline. Its 50-percent screening requirement went into effect in February of this year.

To some degree, security, economy, and technology are all inherently tied as both government and the private sector explore means to secure and expedite freight without creating supply chain backlogs. Supply chain visibility and security go hand in hand, provided that expectations and objectives are aligned, and the necessary processes and technologies are present to facilitate compliance. Many shippers are just grasping the importance of these objectives and are relying on their supply chain partners to allay any behavioral changes.

Beyond normal expectations, air cargo companies are voluntarily taking initiatives to comply with TSA mandates. The Certified Cargo Screening Program (CCSP) and Certified Cargo Screening Facilities (CCSF) are efforts to push security compliance deeper in the supply chain, identify and reward known shippers, and facilitate risk assessment at point of origin rather than point of departure. Shippers and service providers have a stake in following these self-imposed guidelines to smooth out any wrinkles before these standards become mandatory.

Many air cargo companies are already in compliance with U.S. Customs Border and Protection's C-TPAT initiative, with 39 percent of survey respondents meeting this criterion.

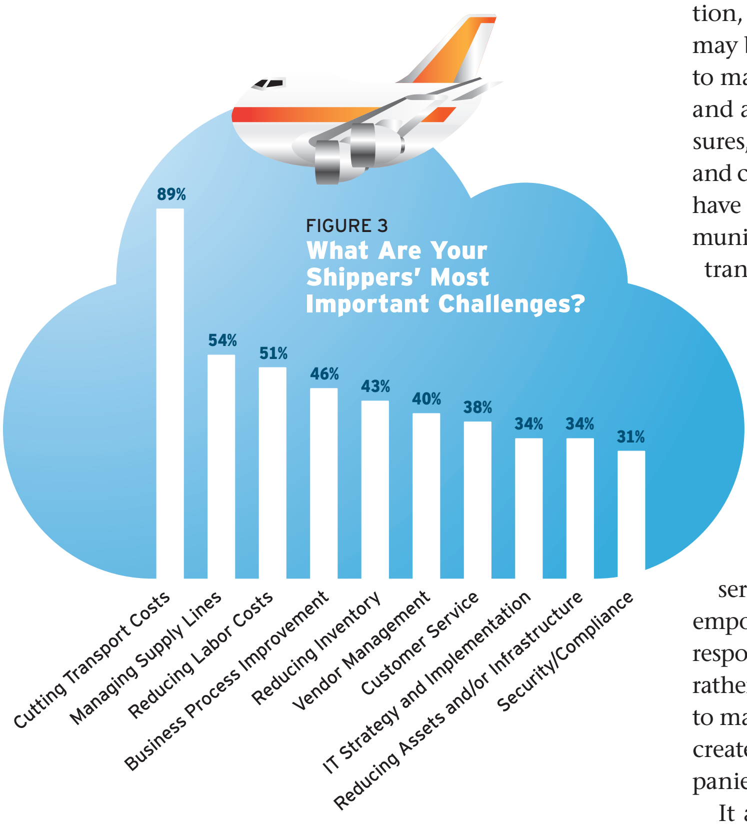


FIGURE 3
What Are Your Shippers' Most Important Challenges?

That only 17 percent of survey respondents cite modal competition as an industry challenge belies the fact that shippers are increasingly looking at cost-competitive transportation alternatives. As with surface-bound rail/intermodal solutions, steamship lines and trucking companies are setting the table to capture some demand by offering guaranteed ocean-road services. While courting such opportunities may warrant sea-changes in how businesses account for longer lead times, the promise of leveraging ocean and truck or sea-air combinations to manage and expedite last-mile moves is beginning to gain credibility.

SHIPPER LINE OF FLIGHT

Just as carriers are looking to squeeze better mileage and efficiency out of their assets, shippers are bound to rationalizing their use of airfreight services, consolidating orders, and using more expensive transport options only as demand necessitates.

Among perceived shipper challenges, 89 percent of survey respondents identify cutting transport costs as customers' top priority, followed by managing supply lines (54 percent), reducing labor costs (51 percent), business process improvement (46 percent), reducing inventory (43 percent), and vendor management (40 percent) (*see Figure 3*).

Service provider bias is evident in the fact that reducing assets and/or infrastructure, IT strategy and implementation, and security/compliance are lesser concerns. Shippers may be leaning on transportation and supply chain partners to manage and/or mitigate costly investments in technology and assets, or get up to speed with pending regulatory measures, but some are bringing responsibility for managing costs and compliance in-house. The TSA's CCSP and CCSF programs have engendered a great deal of support from the shipper community, particularly among those that rely heavily on air cargo transport.

Squeezing transportation costs is a priority for airfreight buyers, given economic and consumerism trends. Practical cost-cutting considerations necessarily direct shippers to explore potential efficiencies upstream in the supply chain, including more effectively managing vendors and supply lines, and driving business process improvements.

For some air cargo service providers, presumably those with core capabilities and less-diversified logistics services and resources, this presents a double-edged sword: empowering shippers and consignees to build more flexibility, responsiveness, and lead time farther back in the supply chain, rather than depend on expedited and expensive cargo services to manage exceptions, can take business away. If anything, it creates a more competitive space for pure-play air cargo companies and more competitive pricing for shippers.

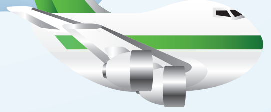
It also opens up opportunities for intermediaries with more developed end-to-end solutions that allow customers greater latitude in how they strategically manage their supply chain and mix and match modes to organically expand their business.

WHO'S WHO IN AIR CARGO

To give airfreight buyers a more complete listing of leading air cargo companies in the marketplace, *Inbound Logistics* invited airlines, expeditors, air-centric 3PLs, and forwarders to submit their credentials for our annual directory.

Our database provides a surface-level cross-section of air cargo service providers with drill-down snapshots of the different services, Web solutions, and value-added offerings these companies provide. From smaller non-asset-based forwarders with niche operational areas to global, asset-heavy airlines, and all breeds in between, *IL*'s Who's Who in Air Cargo presents an informational beacon for shippers to explore solutions and solutions providers that meet their unique business requirements.

Turn the page and find out what's what among our Who's Who in Air Cargo. ■



Who's Who in Air Cargo

To get your search for an air cargo provider off the ground, check out this list of leading players.

COMPANY NAME / WEB ADDRESS	PHONE	ASSET- OR NON-ASSET-BASED*	AIR FREIGHT SERVICES: CUSTOMS CLEARANCE	COMPLIANCE *	HEAVY FREIGHT	HAZMAT	DOOR-TO-DOOR	PERISHABLE	OVERNIGHT	NEXT FLIGHT OUT	CHARTER	HIGH VALUE	OTHER SERVICES: NVOCC	OCEAN	CUSTOMS BROKER	CONSOLIDATOR	LOGISTICS
A.N. Deringer www.anderinger.com	888-612-6239	N	✈	✈	✈	✈	✈	✈	✈	✈		✈	✈	✈	✈	✈	✈
Agility Logistics www.agilitylogistics.com	714-513-3000	B	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈
AIT Worldwide Logistics www.aitworldwide.com	800-323-6649	N	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈
Alaska Airlines Air Cargo www.alaskaair.com/cargo	800-252-2752	A	✈	✈	✈	✈		✈	✈	✈	✈	✈				✈	✈
Argents Express Group www.argents.com	843-216-8301	B	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈
BDP International www.bdpinternational.com	732-572-2248	N	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈
Bellair Expediting www.bellair.com	847-928-2500	N	✈	✈	✈		✈		✈	✈	✈			✈		✈	✈
Concert Group Logistics www.cglship.com	630-795-1300	N		✈	✈	✈	✈		✈	✈	✈	✈	✈	✈		✈	✈
Continental Airlines Cargo www.cocargo.com	800-421-2456	A		✈	✈	✈		✈	✈	✈		✈					
Damco www.damco.com	973-514-5126	N	✈	✈			✈			✈		✈	✈	✈	✈	✈	✈
DB Schenker www.dbschenkerusa.com	800-225-5229	N	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈
Delta Cargo www.deltacargo.com	800-DL-CARGO	A	✈	✈	✈	✈		✈		✈	✈	✈					
DHL Global Forwarding www.dhl-dgf.com	800-426-5962	N	✈	✈	✈	✈		✈	✈	✈	✈		✈		✈	✈	✈
Distribution By Air www.dbaco.com	800-272-1379	N	✈	✈	✈	✈	✈		✈	✈	✈	✈		✈		✈	✈
Expeditors www.expeditors.com	206-674-3400	N	✈	✈	✈	✈	✈				✈	✈	✈	✈	✈	✈	✈
FedEx www.fedex.com	800-463-3339	B	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈
Hassett Air Express www.hassettair.com	800-323-9422	B	✈	✈	✈		✈		✈	✈	✈	✈		✈	✈		
IJS Global www.ijsglobal.com	203-504-9760	N	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈	✈

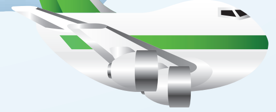
✱ KEY:

Asset- or Non-Asset-Based:
A = Asset-based; N = Non-asset-based; B=Both

Compliance:
Shipments comply with government, security, and trade regulations

Documents:
Shippers can book/create customs or import/export documents online

VALUE-ADDED SERVICES AND SPECIALTIES	WEB SERVICES: RATE QUOTES	WEB SERVICES: REAL-TIME TRACKING	WEB SERVICES: DOCUMENTS *	WEB SERVICES: OTHER WEB SERVICES	CERTIFICATIONS
Purchase order management		✈	✈	Purchase order management	C-TPAT, IATA, Hazmat
Chemicals, project logistics, fairs & events		✈	✈	e-government solutions, origin cargo management	
In-home, pharmaceuticals, government, automotive, energy, oil & gas	✈	✈	✈	EDI, PO and inventory management	IATA, TAPA, C-TPAT
Live animal shipment services	✈	✈	✈	Booking requests	Cool chain certification
Domestic/international trucking & brokerage, warehousing, project cargo, ocean, global DDP, AES, consulting		✈	✈		FMC, NVOCC, IATA, C-TPAT, DOT
All services relating to international air freight	✈	✈	✈	Global reporting system	ISO 9001:2000, C-TPAT, DGAC, Six Sigma, ACC Responsible Care
Hand carry, deferred	✈	✈	✈	POD tracking	
Time-critical, hotshot, LTL, FTL, asset recovery, trade show	✈	✈	✈	Shipper's letter of instruction	
ClimateSecure, PetSafe, human remains		✈		Carbon footprint calculator, shipment booking	
Supply chain development, consulting		✈		E-mail alerts, GPS tracking	ISO, C-TPAT, IATA
Logistics management, warehousing, European rail, ground	✈	✈	✈	Shipment scheduling and booking	ISO 9001, SmartWay
Live animals, human remains, pharmaceuticals		✈		Shipment booking, e-Billing	
Free trade zone, project cargo, border crossing, ground freight, transload/crossdock, defense/government, consolidation & distribution		✈		Customized reporting, EDI	ISO 9001:2000, C-TPAT, Cargo 2000 Phase 2
Trade show & conventions, vehicles, film and broadcast industry	✈	✈		e-Billing	
Distribution, insurance, order management, project cargo		✈	✈	Quote monitor, shipment booking	ISO 9000
Time-definite, expedited services	✈	✈	✈	Pickup scheduling, POD capture, claims, reporting	
Full ground options	✈	✈		Online pick up requests, custom tracking and report detail, EDI	ISO 9001
Trade consulting services, project cargo & management	✈	✈	✈	Online reporting, purchase order management	ISO 9000:2000



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Kuehne + Nagel www.kuehne-nagel.com	201-413-5500	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Lynden www.lynden.com	888-596-3361	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mach 1 Global Services www.mach1global.com	480-921-3900	N		✓	✓		✓		✓	✓	✓	✓	✓	✓		✓	✓
OIA Global Logistics www.oiaglobal.com	800-938-3109	N	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Panalpina www.panalpina.com	973-683-9000	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Panther Expedited Services www.pantherexpedite.com	866-347-2101	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓			
Pegasus Logistics Group www.plg.cc	469-671-0300	N	✓	✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓
Phoenix International Freight Services www.phoenixintl.com	800-959-9590	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Pilot Freight Services www.pilotdelivers.com	610-891-8100	N	✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Priority Worldwide Services www.priorityworldwide.com	800-727-1085	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Radiant Logistics† www.radiant-logistics.com	425-462-1094	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
SDV International www.sdvusa.com	718-525-8100	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
SEKO www.sekoworldwide.com	630-919-4800	N	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Service By Air www.servicebyair.com	888-GO-MY-SBA	A	✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
Team Worldwide www.teamww.com	800-527-1168	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
TransGroup Worldwide Logistics www.transgroup.com	800-444-0294	N	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
UPS www.ups.com	800-443-6379	B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
US Express Freight Systems www.usexpressfreight.com	800-328-8000	N	✓	✓	✓		✓		✓	✓		✓		✓			✓

† Airgroup and Adcom Worldwide

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Insurance solutions	✈	✈	✈	Order management integration	Cargo 2000 Phase 2
Supply chain management, scheduled Alaska service, trade show, home delivery	✈	✈	✈	Reporting, invoicing, EDI	
Same-day, hand carry, FCL, LCL, hotshot, LTL, truckload, warehousing, distribution management		✈		EDI	ISO 9001-2000, C-TPAT, BASC, SmartWay
Warehousing & distribution, pick/pack, kitting, labeling, assembly, returns, order & inventory management		✈	✈		ISO 9001:2000, C-TPAT, IMDG/ CFR49 Hazmat, IATA Certified
End-to-end supply chain management solutions and intercontinental air/ocean freight		✈			ISO 9001:2008, ISO 14001:2004, OHSAS 18001
Expedited ground, elite services	✈	✈		Order entry	ISO 9001:2000
Warehousing, white glove service, global routing center		✈		EDI, handheld POD	ISO9001:2000
Cargo insurance	✈	✈		Shipment status information, printable forms	
Warehouse management, government & automotive services, home delivery	✈	✈	✈	E-mail alerts, EDI	ISO 9001:2000, C-TPAT,TAPA, SmartWay
Export licensing, packing, crating, bonded warehousing, purchasing	✈	✈	✈	Online invoices, statements, inventory services	
Warehousing and distribution, transborder services, finished goods distribution	✈	✈	✈	Purchase order management	ISO, IATA, C-TPAT, TAPA
AOG 24/7, aerospace, oil and gas, healthcare, cosmetics, wines and spirits		✈		Project and purchase order management, WMS	ISO 9001-2000, ISO 14001-2004, ISO 18001-2004, C-TPAT, Hazmat, IATA, FMC, Cargo 2000
Supplier PO management, Customs audit review, U.S. home delivery, trade show, aviation/aerospace, fashion/retail, pharma	✈	✈	✈	MySEKO booking, interactive shipment calendar	ISO 9001:2000, C-TPAT, TSA, PDMA and Hazmat, IATA, ITAR
Ground shipping services, trade show, health care, furniture, CPG	✈	✈	✈	Shipment booking, management reports	IATA, C-TPAT
Letters of credit, warehousing, distribution, packing, crating, white glove, trade show services		✈		Customs reports	ISO 9001:2000, C-TPAT, SmartWay
Full-service logistics provider	✈	✈	✈	Purchase order management, reports	
Consolidation, transload/crossdock, DC bypass, hand carry, rail intermodal, ground freight	✈	✈	✈	Pickup scheduling, e-Billing, reports	ISO, C-TPAT
Medical equipment, trade shows	✈	✈	✈	Automatic e-mail updates	

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from North, Central, South America, the Caribbean & Globally

What They Said
About Last Year's MATTECH:

What were your primary reasons for exhibiting this year? **"Open up our market in Latin America"** *How likely are you to exhibit at this event next year?* **"Good"** *How would you rate your exhibiting experience?* **"Good"**
– **Jamco** Canada

What were your primary reasons for exhibiting this year? **"To pick up South American Customers"** *Did you meet your exhibiting objectives?* **"Yes"**
Absolute Lift Parts

What were your primary reasons for exhibiting this year? **"Develop new customers"** *Did you meet your exhibiting objectives?* **"Yes"** *How likely are you to exhibit at this event next year?* **"Very"** *How would you rate your exhibiting experience?* **"Good"**
– **Wholesale Forklifts**

UPDATE: Last year they had 2 booths in Mattech. They have already taken 3 for 2009!

What were your primary reasons for exhibiting this year? **"Exposure to the Export Market"** *How likely are you to exhibit at this event next year?* **"Very Likely"** *How would you rate your exhibiting experience?* **"Very Good"** *Did you meet your exhibiting objectives?* **"Yes"**
– **Andersen & Associates**

UPDATE: They had 1 booth in MATTECH last year and just reserved 6 booths for 2009!

How likely are you to exhibit at this event next year? **"Yes"** *Did you meet your exhibiting objectives?* **"Yes – GREAT JOB!"**
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A Special Supplement from *Inbound Logistics* and *Chemical Week*

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Chemical Logistics

A JOINT SUPPLEMENT FROM

chemicalweek inbound logistics

All articles written by Amy Roach Partridge

Volumes Down, Spirits Up

The chemical industry copes with an uncertain economic climate.

While much of the news about the current recession has been focused on Wall Street, the housing market, and the automobile business, the chemical industry has not been spared. Chemical companies are also suffering – facing rising costs, lower profits, and the need to cut jobs and close plants.

"The chemical industry's decline was driven by the collapse of domestic demand, the disappearance of export markets – which experienced their worst decline since 1952 – and severe inventory de-stocking," says Kevin Swift, senior economist for the American Chemistry Council (ACC).

And it is not just American chemical companies that are in trouble; the industry is feeling the pinch around the globe. "The chemical industry downturn is global and synchronized," Swift notes. "Nations that depend on manufactured goods exports have been affected the most."

Chemical shipment volumes are down significantly across the board, but because chemical manufacturers supply products to a large variety of vertical industries, some companies are faring better than others. "Volumes in the chemical industry have declined on average from five percent to 30 percent since last year, depending on the sector the company is serving. Chemical producers serving the auto industry, for example, are worse off than companies selling product to food manufacturers," says Steve Hamilton, CEO of ChemLogix, a Blue Bell, Pa.-based third-party logistics provider (3PL) for the chemical industry.

The fact that chemical producers are so well-diversified is one advantage during this recession. Profits from more successful units can make up for the loss of business in other units, helping companies weather the storm until the economy picks up.

Philadelphia-based chemical producer Arkema, for example, credits a global mix of customers and business units for keeping its balance sheet fairly stable. One of its major products is plexiglass, which is used in tail light assembly for most vehicles produced in the United States. With demand for vehicles way down, demand for plexiglass has dropped off, too.

Arkema's plexiglass business – as well as other units that rest heavily on the auto and construction industries – is hurting. "But we have enough global exposure to other market segments that, across the board, we are doing well," says Ron

LOOKING AT LOGISTICS: Chemical producer Arkema is coping with the recession by improving business processes wherever possible. Logistics heads the list.

Keegan, director, IS&T business management for Arkema.

The company is in the midst of a "reinvent Arkema" project, with a goal of insulating against recession by thoroughly examining overall operations and improving processes wherever possible. Logistics heads the list.

"Logistics is an important area to focus on because we spend a good deal of money on it, particularly for transportation," Keegan explains. Contracts for inbound logistics, for example, are getting a second look.

"In the past, we didn't pay much attention to inbound logistics; we just took the product price from our suppliers with freight and transport costs included," he says. "Now, we are breaking out transportation from the actual product cost to see if we can improve our rates – perhaps even by bringing transportation in-house."

Carriers and 3PLs that serve chemical companies have watched volumes fall precipitously and adjusted business plans accordingly.

Technology will play a big role in helping Arkema improve supply chain efficiency during the recession, and beyond. While budgets for new technology are slim this year, the company plans to boost its logistics technology spending in the not-too-distant future. For example, Arkema currently uses its transportation management system in the United States only, but plans to roll it out to units in Mexico and Canada as well, to improve and unify its North American transportation strategy.

Global chemical giant BASF shares a similar tale of recession impacts and intentions. "Chemicals are an essential cross-sector industry, and we supply virtually all the other industries, so we were naturally impacted by their declines," says BASF spokesperson Betsy Arnone. "But over the past few years, we have adopted measures that equip us to face the difficult situation: a long-term strategy for value-adding growth, solid financing, and a more robust and competitive product portfolio."

BASF is taking steps to tailor production to reflect worldwide demand, and is working to reduce inventory, actively manage costs, and reduce expenses wherever possible. "If necessary, we will implement further measures to improve the performance of individual businesses and assets," Arnone notes.

One area where BASF has not cut back is research and development. The company believes that a high level of R&D spending is essential for maintaining a leading position in the chemical industry, and to continue to shape the industry's future when the economy recovers.

Providers Feel the Pinch

Producers are not the only companies in the chemical business impacted by the recession; service providers catering to the chemical industry are taking a hit, too. Carriers and third-party logistics providers that focus on chemical companies have watched volumes fall precipitously and have had to adjust business plans accordingly.

Asset-based providers – those who own the trucks that products are shipped in or the warehouses where chemicals are stored – are particularly vulnerable because so much capital is tied up in those assets. "Volumes on the asset side of our business have dropped between 15 and 20 percent," says ChemLogix's Hamilton.

In some cases, asset providers have had to furlough employees, and park trucks or take rail engines offline to cut costs and reduce the amount of available capacity.

The Oil Factor

Last summer, oil was ringing up at $140 per barrel and rising – today's prices fall in the $60-per-barrel range. What a difference a year makes. But to think that chemical producers and transportation providers are not still worried about oil is incorrect.

"The oil pricing situation will remain for the foreseeable future and will be volatile," predicts Steve Hamilton, CEO of ChemLogix, a 3PL based in Blue Bell, Pa. "Oil price spikes are a big concern in any economy – but especially now."

Though he's admittedly not an oil-pricing expert, Hamilton doesn't expect prices to return to last year's record triple-digit numbers because the current market would not sustain those levels. "When demand is down as much as it is now, it's hard to see how fuel prices could spike that much again," he says.

The fuel wildcard also comes into play for chemical companies in the raw materials arena. Because so many chemicals are petroleum-based or contain petroleum in some form, increases in oil prices mean increases in material costs.

"When raw material prices go up, companies often have to accept less margin or walk away from business," says Carl Neverman, vice president, client solutions for Weber Distribution, a 3PL based in Los Angeles, Calif.

So, in addition to hoping for a fast turnaround in the economy, the chemical industry has its eyes on oil prices, hoping they don't spike the way they did last year.


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Asset-based warehousing and transportation company Weber Distribution has also seen its chemical shippers' volumes drop, and is adjusting its business accordingly. "We are trying to work smarter and be more efficient internally. We also need to be more flexible with customers," says Carl W. Neverman, vice president, client solutions for Los Angeles-based Weber.

The focus today is on specific services that make sense when volumes tumble. "We are doing more just-in-time deliveries and trying to consolidate shipments from different chemical companies moving to the same consignee," Neverman notes. "Companies can gain an advantage by combining orders going to one destination into a larger LTL shipment or truckload, as opposed to sending them individually as smaller LTL shipments."

Chemical companies are also paying more attention to their warehousing and distribution strategy, which works to Weber's advantage. Where companies targeting West Coast customers might previously have expanded an existing DC or opened a new one, today's economic climate has largely stalled those efforts. Instead, to avoid the overhead of operating their own facility, many chemical companies are turning to an outsourced provider such as Weber to handle warehousing needs.

Cash is King Rules

Another recession-driven shift occurring in chemical logistics is an increased focus on inventory optimization – companies are shedding inventory to free up budgets and increase cash flow. "The cash-is-king theory is now taking hold in most industries," explains Hamilton. "Companies are looking closely at obsolete inventory, and analyzing how much product customers are ordering to ensure they maintain the right inventory levels."

Some chemical producers have turned to technology solutions such as transportation management systems (TMS) as a way to cut costs, fine-tune inventory, and improve transportation processes during the downturn. Producers have been hard-pressed to wrestle any further efficiencies out of logistics staffs that are already pared down to bare-bones levels, so technology is an obvious next step.

To cut overhead, many chemical companies are turning to 3PLs such as Weber Distribution to provide warehousing solutions.

"Chemical companies have been slower than other industries to adopt technology, but now they are embracing it as they look to cut costs every way they can," explains Hamilton, who notes that because of this increased need for technology systems, ChemLogix's business is growing.

ChemLogix also reports an increase in its freight payment business. Due to the problems in the U.S. financial sector, some chemical producers are not comfortable having a bank handle freight payment. "There is an underlying fear of banks going belly up," Hamilton explains. As a result, many companies are seeking out 3PLs with solid financing to handle freight payment needs.

One interesting impact of the recession is that the drop in chemical producers' shipping volumes has brought with it a drop in freight rates. Where ever-increasing transportation costs were the norm for years, rates have been on a steep decline since the economic contraction began.

"When the economy was cooking, certain transport modes were very expensive," says Arkema's Keegan. "Now we've had some relief. From a transport buyer's perspective, the good news is that plenty of capacity is available and transportation is generally less expensive than it was six months or one year ago."

While Keegan is certainly not hoping for the current economic environment to last too long, the drop in freight rates has eased some cost pressure, and provides some short-term relief. "During the next year, as volumes increase and markets start to recover, we'll be able to take advantage of the low transportation rates and perhaps increase our profit margin," he notes.

Stop and Smell the Roses

For "glass-half-full" types, the recession-driven lull in demand also creates time to complete the logistics version of stopping to smell the roses.

"During a normal business climate, the pace of work is so busy that you focus on getting product out the door, and don't have time to think about business process improvement," says Keegan. "The hidden blessing of this recession is that we've been able to stop and analyze our business and put in place plans that will make us stronger when we come out of the downturn."

When will that be? ACC economist Swift is looking to next year.

"Leading indicators suggest a near-term trough is approaching, but it is recovery of final demand and inventory swing that will engender a sustained upturn," he says. "We will see signs of industrial recovery in 2010." CL

Training Day

The need to comply with regulations and mandates makes training a top priority for the chemical industry.

To protect against accidents and spills, and to ensure workplace safety, chemical producers and their supply chain partners are subject to a litany of regulations and mandates. Complying with these regulations is not always easy – and often requires extensive training. "To avoid costly penalties, companies need to commit resources, including training, to assure that they meet all their regulatory obligations," says Scott Dunsmore, vice president of business resources for Lion Technology, a training company that specializes in environmental, hazardous waste, hazmat transportation, and health and safety regulations.

Areas of Risk

Regulations come from three main sources and cover three major areas of risk for the chemical industry:

1. Workplace safety. The Occupational Safety and Health Administration (OSHA) developed its Hazard Communication Standard (HazCom) to make sure that the hazards of all chemicals imported into, produced, or used in U.S. workplaces are evaluated, and that this information is transmitted to employers and employees.

Typically, HazCom safety training introduces employees to the regulations, offers information on the various types of chemicals found in workplace environments, and trains them to handle the chemicals appropriately.

J.J. Keller & Associates Inc. offers programs to help companies conduct required general-awareness hazmat training, as well as address function-specific and safety training needs.

"HazCom is one of the standards most often cited by OSHA; employees must be trained to read labels properly, and know the location of materials safety data sheets," says Robert Ernst, associate editor, workplace safety for Wisconsin-based J.J. Keller & Associates, which provides safety and regulatory compliance products and services.

2. Transportation safety. The U.S. Department of Transportation's (DOT) Hazardous Materials Regulations (HMR) govern the transportation of hazardous materials by highway, rail, vessel, and air. These regulations also address hazardous materials classification, packaging, hazard communication, and emergency response information.

"Training employees to meet HMR standards includes general awareness, as well as function-specific, safety, and security training," explains Randy Skoog, J.J. Keller's associate editor for transportation.

Because of the multimodal nature of chemicals transportation, DOT has built into its rules that different risks and hazards may be present through various transport modes.

"For example, highly magnetized materials that impact navigation systems pose risks in air transportation that aren't critical in other modes," notes Dunsmore. This makes sense – but also means that multimodal shipments require more training.

"For companies that transport by various modes, training content will increase," Dunsmore says. International hazmat shipments – usually those sent via air or ocean – are also tricky to train for because employees must be mindful of other countries' regulations.

3. Hazardous waste safety. The Environmental Protection Agency (EPA) takes hazardous waste seriously, and has developed regulations for the generation; transportation; and treatment, storage, and disposal of any such waste. "EPA regulations include specific training requirements for managers and operations personnel, and they require initial training mandates as well as recurrent training," Dunsmore explains.

A reporting component to the EPA's roster of regulations adds to the training burden – employees must understand what, when, and how to report hazardous waste information.

"If a company holds certain toxic chemicals in excess of specific thresholds, it is required to report those chemicals to the EPA, prepare emergency response plans in case of any incident with those chemicals, and be able to provide information to emergency response personnel," notes Pete McLaughlin, editorial manager, workplace safety, with J.J. Keller.

Employees can receive hazmat training online 24/7 from companies such as Lion Technology.

Safety and security training is one additional area that many companies in the chemical supply chain are investing in. After Sept. 11, the United States enacted various security regulations that are driving much of the demand for this type of training. The DOT is taking a lead role in this arena.

"The DOT has added security awareness to its requirements for training, meaning every hazmat employee should be aware of security risks associated with transporting hazardous materials," Skoog explains.

But can all this regulatory activity result in training overload for chemical companies and their partners? "There's no such thing as too much training when you're dealing with hazardous materials," Skoog says. CL

The chemical industry spends more than $2 billion per year improving worker health and safety.

Responsible Care: 20 Years and Going Strong

The American Chemistry Council's standards program combines industry knowledge and regulatory expertise to ensure chemicals safety.

Though there was no cake or candles, last year marked the 20th birthday of the American Chemistry Council's (ACC) Responsible Care (RC) program. Started in 1988, RC is a framework adopted by ACC member companies and partners to improve the chemical industry's environmental, health, safety, and security (EHSS) performance. RC has grown into a global initiative practiced in 53 countries, and consists of responsibilities such as implementing a stringent code of security practices, measuring and publicly reporting safety performance, and committing to continuous EHSS improvements.

Through RC, chemical manufacturers and their global supply chain partners can share and leverage best practices. "This enables the industry to not only maintain a safety performance four times better than the U.S. manufacturing industry in general, but to continually improve it," explains Dan Roczniak, senior director of Responsible Care for ACC.

Safety is serious business in the chemical industry. Handling, storing, and transporting chemicals all present possible safety hazards to workers, companies, and communities surrounding the chemical industry. RC seeks to help protect all chemical production, distribution, and transportation touchpoints. "Understanding the hazard and risk potential of each chemical process operation helps ensure the safety of all stakeholders," Roczniak says.

Though RC's mission has remained the same, the program has evolved during the past 20 years. The original set of six Codes of Management Practices has been replaced by the comprehensive Responsible Care Management System (RCMS), which incorporates concepts from the original codes, and combines the practices of leading private sector companies, the International Standards Organization, and federal regulatory requirements.

In addition, while members previously conducted annual self-evaluations of code implementation, ACC now uses a mandatory third-party certification process. "To demonstrate our industry's commitment to responding to stakeholders' performance expectations, ACC members and partners report their EHSS measures on a public Web site," Roczniak explains. Additionally, ACC has recently adopted a set of five-year performance goals and targets around worker safety, product stewardship, and greenhouse gases.

One big change to RC occurred in the early 1990s, when membership was extended beyond chemical manufacturers to include other companies involved in the chemical supply chain, such as distributors and transportation providers. This change enabled the adoption of common practices throughout the supply chain and allowed chemical producers and their partners to interface on a common basis.

"As a liquid bulk hauler of chemicals, we have common interests and issues that need to be addressed with our chemical shippers. ACC's Partner Program gives us a connection and a platform to work with the industry on safe handling and transportation of chemicals," explains George Peirce, vice president of marketing for Transport Service Co., a bulk

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In order to be certified as an RC partner, companies such as Transport Service Co. must maintain a sound management system covering EHSS processes. "We have to meet and comply with specific performance standards in the areas of policy and leadership; planning; implementation, operation, and accountability; performance measurement; corrective and preventive action; and management review," explains Peirce.

"Understanding the hazard and risk potential of each chemical process operation helps ensure the safety of all stakeholders."

— **Dan Roczniak,**
senior director of Responsible Care,
American Chemistry Council

The company is also audited by an independent firm to assure that its procedures are in place and being followed. The effort pays off because being an RC partner "gives us credibility in working with chemical shippers and, in some cases, a competitive advantage over carriers who are not certified partners," says Peirce.

So what will the next 20 years bring for RC members and partners? ACC will soon embark on a strategic review of the Responsible Care initiative, inviting industry representatives and external stakeholders to make recommendations on how to improve Responsible Care. Look for these efforts to begin later this year, with recommendations forwarded to ACC in late 2010 or early 2011. CL

Desperately Seeking Seamless Logistics

Elemica's technology helps chemical manufacturer BASF seamlessly collaborate and connect with carriers.

The chemical industry is based on science. The art of chemical logistics, however, is increasingly based on technology. Chemical manufacturers and their logistics partners – trucking, rail, and ocean carriers, as well as third-party logistics providers – have begun to rely on technology for everything from processing orders and managing warehousing and transportation needs, to connecting electronically with trading partners.

Communicating with trading partners is often done through Exton, Pa.-based Elemica, which offers a global system of manufacturers and distributors who collaborate and integrate supply chain processes through a unified electronic network. The company's "single supply chain execution solution" helps some 1,800 business partners integrate their business systems – such as transportation management, warehouse management, inventory management, and enterprise resource planning (ERP) systems – with the corresponding systems of business and trade partners. Through Elemica, a chemical company's ERP system can "talk" to the systems of any of its carriers.

Global chemical giant BASF, one of 22 companies that partnered to form Elemica, uses the company for a number of business functions including procurement, order creation and management, and vendor managed inventory. When BASF recently decided it needed a better way to collaborate with its more than 100 North American motor freight carriers, it turned to Elemica once again, implementing its Logistics Road solution. The solution helps BASF seamlessly connect, standardize, and automate logistics processes with its carriers, a set-up that "gave us built-in efficiencies before we even started conducting transactions," says Tom Warner, manager of e-commerce systems integration, BASF.

By streamlining connection to its North American road carriers – who transport several hundred thousand shipments annually – BASF expects to yield benefits including reduced freight costs, faster shipment turnaround times, improved visibility into transportation processes, lower administration costs, and fewer errors. The Elemica network integrates completely with BASF's ERP system, improving invoice and shipment accuracy. In turn, carriers can view the loads and bookings that BASF has tendered to them, respond to tender offers, set pickup and delivery appointments, communicate shipment status information, and submit freight invoices.

Call, Fax, Repeat

Before implementing the Logistics Road solution, BASF used a typical manual process to correspond with its carriers. "We used to fax or call carriers with a load tender, then fax or call again if we needed to make changes, and hope the carrier would answer the phone or send another fax to confirm our changes," Warner explains. "Now, we don't need a customer care rep or a warehouse employee to babysit the process. We can automate the backend procedures because we've automated communication and connectivity with carriers."

This full automation and connectivity between BASF and its carriers is exactly what Elemica aims to achieve. "We see ourselves as a collaboration

To better collaborate with its North American road carriers, BASF turned to Elemica's Logistics Road solution.

module," explains Rick Bushnell, vice president of sales, Americas for Elemica. "The same way SAP offers a module that handles procurement, for example, our goal is to be the module that handles the collaboration space between external trading partners and their business systems."

But as any experienced logistics manager knows, trading partners are not always on the same playing field when it comes to technology. BASF sometimes worked with large, national carriers who were able to adopt the latest technology; other loads were tendered to small, local carriers with no technology background. For this reason, Elemica offers BASF a way to connect with both types of business partners, essentially removing technology as an obstacle so BASF could focus on getting business transactions done.

The ideal approach for BASF is to integrate with carriers in a system-to-system fashion. "But if carriers aren't able to move fast enough on technology, we can set them up through our Web portal capability," Bushnell explains.

"The advantage for us is that the traffic we get in and out of Elemica looks the same whether the carrier uses the Web site or has a fully integrated back-end solution," Warner says. "And carriers don't have to make a big investment to connect with Elemica if they opt out of full integration."

Getting Carrier Commitment

BASF also worked closely with carriers before getting to the implementation point to ensure that their service providers were on board with the process changes. The company conducted workshops with carriers to show them how the Elemica system would function and to garner feedback. "We reached out to carriers early and often during this process so we didn't get too far without making sure they were along for the ride," Warner notes.

The company also did in-depth preparation and testing for about six to eight months before launching. The roll-out was done on a scheduled basis, a few business units at a time. Now BASF merely onboards new carriers using the same process each time.

While they are still getting various business units up and running and do not have specific results to share yet, BASF is pleased with the system and the benefits it brings. Warner's European counterparts are also looking into using the Logistics Road solution for their business units.

"This used to be a 'gee whiz, how cool!' solution," says Warner. "Now it's just water from the tap, and we completely depend on it." CL

Chemical Logistics on the Web

Check out these online resources to help you manage your chemical logistics challenges.

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Companies that source and manufacture products in Mexico gain opportunities to cut transportation costs, hold less inventory, and provide faster service to customers. But to reap logistics benefits in Mexico, you have to know your way around.

SMART STRATEGY SOUTH OF THE BORDER

It's right next door, it offers relatively inexpensive labor, and it boasts infrastructure and technology perfectly suited to a wide range of needs.

So it's no surprise that many U.S. firms have made Mexico a key node in their supply chain networks. Today, as the quickly evolving global economy drives many corporations to rethink logistics strategies, more and more of them are finding solutions south of the border.

Mexico is the United States' third-largest trading partner after Canada and China. Trade between the United States and Mexico grew at an annual average rate of 25 percent from 1993 to 2007. In 2008, trade between the two nations reached $367.45 billion, according to media company WorldCity, Coral Gables, Fla.

The volume of goods transported across the border in both directions continues to grow. In 2008, imports from Mexico to the United States totaled $216 billion, an increase of 2.3 percent over 2007, according to WorldCity's analysis of U.S. Census data. U.S. exports to Mexico in 2008 totaled $151.5 billion, a rise of 10.6 percent over 2007.

Mexico plays an especially crucial role in the automotive and electronics sectors. Its factories produced 2.1 million vehicles in 2008, up 32 percent from 2005. Seventy percent of the autos built in Mexico are shipped to the United States. The country exported $13.8 billion worth of electronics in 2007, and Mexico has set a goal to become one of the world's top-five electronics exporters by 2010. Analysts predict that exports of high-tech goods made in Mexico will continue to grow at five percent per year.

Part of what's driving Mexico's expansion in autos, electronics, and other sectors is the changing world economic picture, starting with energy. The price of oil, of course, makes a major impact on a company's supply chain strategy. Although prices fell in late 2008, the oil spike just before that period made many companies question the wisdom of transporting materials and products halfway around the world.

As economies recover from the current slump, growing demand for oil will likely cause prices to surge again. World demand for oil will reach 98 million barrels per day by 2015, up from 85 million barrels per day in 2008, according to the U.S. Energy Administration. Transportation comprises one-third of

all energy, and 20 percent of that energy is consumed in truck and rail movements, explained Marc Wulfraat, director of supply chain strategy for TranSystems/Esync, at a Supply Chain and Logistics Association meeting in Canada in February 2009.

But it's more than oil prices that drive a company's decision to site manufacturing and distribution in Mexico. Another compelling reason is Mexico's skilled, experienced workforce, including many capable managers with years of experience handling exports to the United States.

Also, Mexico's proximity to the United States translates into substantial savings. With a less complex supply chain, and a shorter distance to market, a company can hold less inventory.

"If a company has to hold six weeks of inventory because it sources in Asia, and every week is worth $1 million, that's a $6-million investment," says Gene Sevilla-Sacasa, vice president, Latin America at Ryder System, Inc. "But, if a company sources from Mexico, it needs to hold only a week of inventory, and has only $1 million invested."

To reduce the number of miles that products must travel through their networks, many manufacturers are deploying a more flexible, multi-product-line production network. Consumer packaged goods manufacturers are moving facilities closer to large markets to better serve customers and cut transportation costs. Importers are moving facilities closer to major ports, and retailers are reducing direct store delivery volume when it makes sense. Mexico can play a key role in all these supply chains.

Reducing miles traveled to gain shorter lead times becomes especially critical for companies that manufacture customized products. A customer, for example, would much rather receive an order for 100 computers in a specific configuration in five days from Mexico than in four to six weeks from Asia.

Near-sourcing in Mexico is also good for the environment. Shorter transportation routes translate into a smaller carbon footprint, a major consideration for many businesses today.

Even for companies that source goods in Asia, Mexico may offer an advantage as part of a distribution route. "It costs no more to import goods to the United States through a Mexican port than through a western U.S. port," Sevilla-Sacasa notes.

But with much less congestion in Mexican ports, those goods will make it to the distribution center several days sooner.

Ryder's organized warehouse at a client facility in Mexico. Ryder combines local market knowledge with an intensive analysis of each customer's business.

Challenges in Mexico

While Mexico offers vast opportunities, business leaders who want to explore this terrain should carefully study the map before they rush in. For all its very real advantages, Mexico also poses substantial challenges to foreign companies that manufacture there or use Mexican sites for distribution. Here's a detailed look at some of the greatest challenges.

THEFT AND SMUGGLING

"Security issues play a significant role in Mexico today," says Jorge Salas, director of cross-border and automotive operations at Ryder. "The farther you go into the interior, the longer your loads are traveling through Mexico, and the more attention you have to pay to those details."

On average, one in 300 shipments traveling into or out of Mexico experiences some sort of security breach. In some cases, thieves steal items or hijack entire loads; in others, smugglers hide drugs or other contraband, including illegal immigrants, on trailers, hoping to sneak them across the border. Shipments become vulnerable at many points, including truck stops, which tend to be less secure than their U.S. counterparts.

Compromised loads also pose a major hazard because they jeopardize a company's ability to cross the border quickly. If a firm doesn't maintain a clean record and the right credentials, its trucks might sit at the border for as long as 30 hours while customs agents inspect the loads.

Allowing smuggled goods into a trailer carries especially dire consequences if a company participates in the Customs-Trade Partnership Against Terrorism (C-TPAT) program, which allows trusted companies to use the Free and Secure Trade (FAST) lane for expedited crossings from Mexico into the United States.

"If contraband is discovered on one of those shipments, then all the supply chain partners involved in that shipment immediately lose their privileges to cross the border in an expedited manner," explains Bill Anderson, group director, international safety, health and security at Ryder.

That penalty can disrupt business for a whole network of suppliers, manufacturers, third-party logistics providers (3PLs), carriers and retailers for weeks, months or indefinitely. It plays havoc with just-in-time (JIT) manufacturing and derails a shipper's commitments to its customers. With so much at stake, any company involved in transportation across the U.S.-Mexican border not only must have a strong security strategy, but must execute it flawlessly.

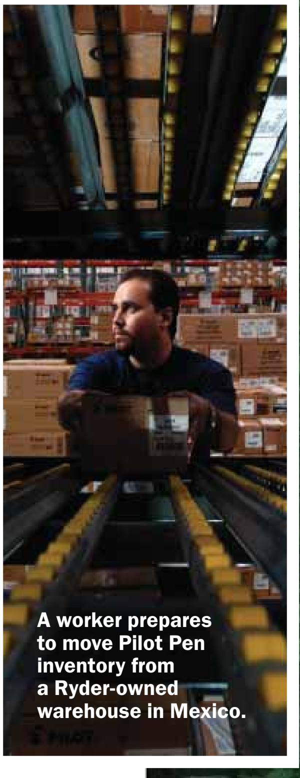
TIME LOST AT THE BORDER

Beyond security concerns, border crossings create other challenges as well. If a company works with carriers, brokers, or other partners that aren't certified to move goods into and out of Mexico quickly and consistently, transit times grow long and

Letter-Perfect Service for Pilot Pen

While many U.S. companies source goods in Mexico or use it to distribute to the United States, a great deal of traffic also flows in the other direction. Mexico is a major market for U.S.-produced goods. A company that sells into Mexico is just as interested in speed, economy, reliability and security as one that ships products from south to north across the border.

Since 2003, Pilot Corporation of America has worked closely with Ryder to deliver writing instruments manufactured in Jacksonville, Fla., to customers throughout Mexico, especially in Mexico City, Guadalajara, and Monterrey. Ryder processes customer orders, handles customer service, manages and stores inventory, handles motor carrier selection and billing, and monitors shipments for Pilot Pen Mexico.



A worker prepares to move Pilot Pen inventory from a Ryder-owned warehouse in Mexico.

Ryder's expertise in managing ground transportation is especially crucial to Pilot Pen, which counts on motor carriers to deliver shipments within a specific time frame. Ryder also works with Pilot Pen's import customs broker to keep goods flowing into Mexico on schedule, making sure all required documents are provided and import duties are paid promptly. When the product reaches Mexico, it passes through Ryder's multi-client warehouse and distribution facility in Guadalajara, where tight security measures ensure theft prevention.

It takes a well-tuned process of this kind to please a demanding customer like Office Depot, one of Pilot Pen's largest in Mexico. "Office Depot does not accept back orders," says Juan Estrella, director of supply chain for Pilot Corporation of America.

Ryder has practically become Pilot Pen's Mexico representative, making it unnecessary for the manufacturer to have a physical presence in Mexico to handle its logistics and sales, says Ernesto Donnadieu, Ryder Mexico Director of Operations.

"The greatest value we bring to Pilot Pen is the confidence they have in Ryder to execute operations according to plan, the satisfaction of their customers, and an efficient supply chain," he says.

Ryder and Pilot Corporation of America are currently working on several strategies for making the operation in Mexico even more efficient and cost effective.

Thanks to its partnership with Ryder, without investing major corporate assets in Mexico, Pilot Pen has been able to grow and prosper while meeting strict retailer requirements.

End-to-End Solutions for Manufacturers

Among the companies that benefit from a partnership with Ryder in Mexico is a U.S. manufacturer that operates three assembly plants and a distribution center in the Monterrey area. Taking responsibility for all of the customer's logistics activities, Ryder handles product that comes from suppliers, receives them in Ryder's storage and cross-docks and later transports them to the assembly plants, where it feeds them to the production lines.

As workers assemble finished goods, Ryder receives them, stores them, releases them and ships them to their final destinations. Ryder's transportation management responsibilities for this customer include management of customs brokers for exports and freight bill audit and payment.

To accomplish all these tasks and meet specific delivery windows, Ryder dedicates management to the job, both at the customer's sites and in its own offices. "Such enclosed working conditions create the environment to monitor for continuous improvement, quality performance on all related processes and, most importantly, the flexibility to manage any volume variation, production changes, new line installations, etc.," says David Contreras, director of operations, Ryder, Mexico.

Ryder also provides end-to-end service to an original equipment manufacturer (OEM) that sources parts in Mexico. Ryder runs regular collection routes from each of the company's suppliers to Ryder's crossdock facility in Monterrey. There, it builds full truckloads for two plants in the U.S. and hauls them to Ryder's facility in Nuevo Laredo.

From that location, a dedicated drayage carrier takes the trailers across the border to Laredo, Texas and turns them over to a U.S. linehaul carrier. Ryder oversees the customs transaction. It also monitors the goods from origin to destination through its Control Tower, Ryder's centralized operations center that provides coordination, visibility and event tracking for all activities along the supply chain. In addition, Ryder continuously uses that information system to optimize routes for greater efficiency.

The transportation management center in Nuevo Laredo provides a complete view of the entire supply chain. This helps Ryder to ensure that every partner in the network performs its job to the highest standards, and that they all pull together to deliver outstanding service.

The OEM benefits from this partnership in several ways. "We reduce the lead time, we improve the visibility and they have one person to go to," says Jorge Salas, Ryder's director of cross-border and automotive operations.

By managing the logistics solution from pickup to delivery, Ryder ensures that no detail, no matter how small, ever slips between the cracks. Due in large part to this integrated service, the customer has seen its lead times shrink since it started working with Ryder several years ago.

impossible to predict. "Some partners may cite a 12-hour transit time, but delivery will actually take 12 days," Sevilla-Sacasa says.

"Some brokers tell their customers, 'I only work from 8 a.m. to 5 p.m., and I don't work Saturday and Sunday,'" says Salas. That sort of half-hearted commitment leaves freight needlessly stranded.

Most often, delays occur at the border because a company makes paperwork errors, or because an agent selects a shipment at random for additional inspection. Loads also languish at the border when transportation equipment fails an inspection due to broken lights, insecure seals, or other problems.

Border delays increase cycle times, undermining efforts to implement just-in-time or lean delivery strategies. And if a company lacks the technology to gain full supply chain visibility, managers don't always know why delays occur or when their loads will be released.

Delays make it hard to maintain customer service levels. A shipment that spends extra hours at the border, for example, might miss the customer's delivery window, incurring penalties for the shipper. Delays also can disrupt manufacturing schedules. To protect against the consequences of unexpected delays, companies might have to keep more inventory on hand, increasing their carrying costs. In all, poor management at the border may add 10 to 40 percent to the cost of a shipment.

CONSOLIDATION CHALLENGES

The cost of trucking in Mexico might also surprise shippers who lack a sound strategy for optimizing transportation. Not every company ships enough volume in or out of the country to make up full truckloads. But less-than-truckload (LTL) shipments are more difficult to manage, particularly in Mexico.

"The LTL network in Mexico is basically non-existent, and very expensive," Salas says. Even when it's feasible to use LTL shipments, irregular carrier schedules can complicate border crossings, and shippers don't enjoy the same economies of scale as moving full truckloads.

The Value of a Trusted Partner

For companies that want to make Mexico a link in their supply chains, the most effective plan is to team with a capable partner. A service provider with solid experience, top-of-the-line facilities, sophisticated technology, a network of excellent carriers, and strong expertise helps customers find their way through Mexico, overcoming the country's many challenges while profiting from its extensive opportunities.

Ryder System has been bringing these advantages to customers in Mexico since 1994. Companies that partner with Ryder enjoy highly optimized supply chain networks with full visibility to enhance control of their shipments. They gain opportunities for

Employees at one of the 26 locations Ryder operates in Mexico.

freight consolidation while working with a single provider that takes full responsibility for the shipment from end to end. Ryder's reputation for security, service and efficiency ensures that loads cross the border quickly, reaching their destinations on time and incident-free. Customers who work with Ryder see lower transportation costs and shorter cycle times. As a result, they invest less money in inventory while continually improving service to their customers.

To achieve these kinds of results, a company needs the right infrastructure, the right service providers, and the right technology. But those resources make up only half the story.

"If one person fails to execute properly, the whole chain would break," says Sevilla-Sacasa. "We offer our customers a disciplined process with great people who execute flawlessly with every shipment."

Customers that work with Ryder flourish in Mexico. Here's how they do it.

Ryder's Presence in Mexico

OPERATIONS IN MEXICO SINCE: 1994

CUSTOMER ACCOUNTS: 56

HEADQUARTERS IN MEXICO: Mexico City

REGIONAL OFFICES: Guadalajara, Monterrey, Saltillo

LOCATIONS: 26

DC SPACE MANAGED: 1.7 million sq. ft.

DC AND YARD SPACE MANAGED: 4.3 million sq. ft.

CARRIERS UNDER CONTRACT: 141+

RYDER DEDICATED VEHICLES: 566

CROSSDOCK FACILITIES: A total of nine facilities in Tijuana/San Diego, El Paso/Juarez and Laredo/Nuevo Laredo

BORDER CROSSINGS MANAGED PER YEAR: 130,000 (approx.)

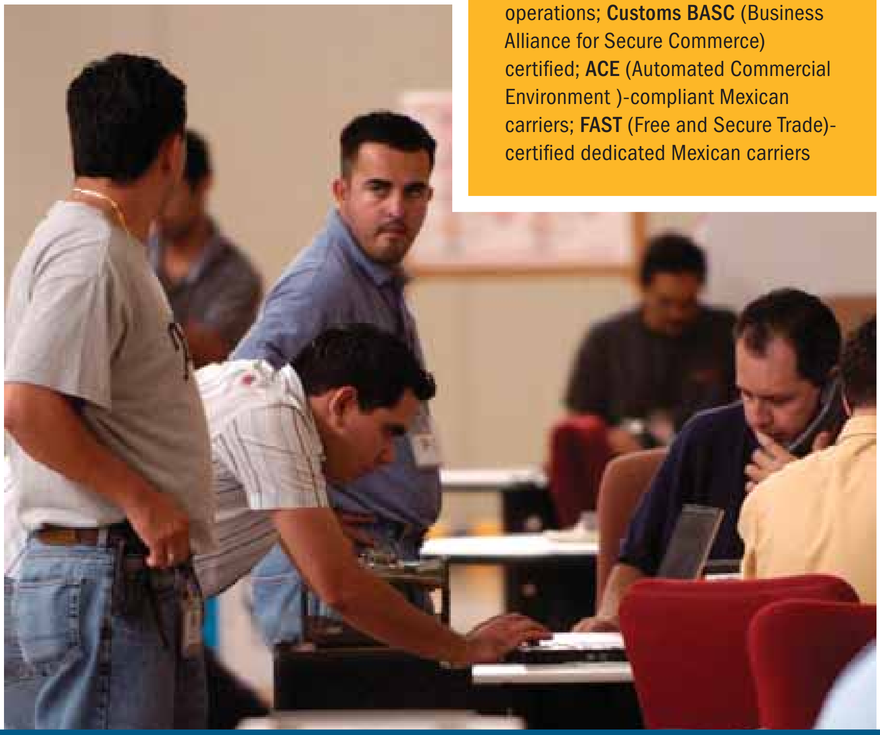
CERTIFICATIONS, STANDARDS AND PROCESSES: **C-TPAT** (Customs-Trade Partnership Against Terrorism) operations; **Customs BASC** (Business Alliance for Secure Commerce) certified; **ACE** (Automated Commercial Environment)-compliant Mexican carriers; **FAST** (Free and Secure Trade)-certified dedicated Mexican carriers

SAFER LOADS

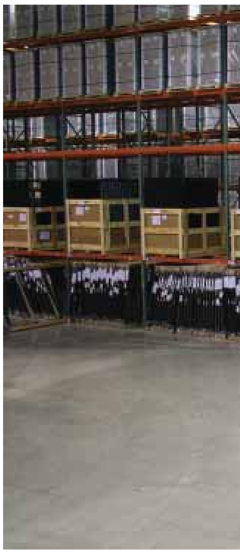
For more than one dozen years, Ryder has been moving large numbers of high-value shipments through Mexico while maintaining an outstanding security record. Ryder and its partner carriers transport approximately 420 loads across the border each day; that's an average of one every six minutes. Ryder upholds these standards by developing a bulletproof security plan, then taking full responsibility for following through.

Consider, for example, its freight yards on the Mexican side of the border. "We either use drug-sniffing dogs, or contract with a service provider to run our cross-border loads through a canine inspection point," says Anderson.

Many of the trucks that move loads for Ryder's customers travel with satellite location units, so managers can monitor their movements and respond if anything seems to go awry. Managers also make sure that drivers visit only approved truck stops. Radio communications and, in some cases, security escorts help to



At the Guadalajara facility, Ryder employees work hard to execute every shipment flawlessly.



Workers follow strict safety measures at all Ryder client facilities in Mexico.

ensure that loads get where they're going without trouble.

"We monitor expected times of arrival (ETAs)," Anderson says. "We know how long it should take for a truck to move from Point A to Point B. If a truck falls outside that acceptable window, it raises a flag for us to investigate, talk to the driver, and maybe inspect the load if we're not satisfied with the causes for the delay."

The rules of security apply both to Ryder's own equipment and drivers and to the operations of its Mexican carriers. "We work with partners that run excellent security programs themselves, but we work together to manage them," Anderson says.

SHORTER TRANSIT TIMES

With its outstanding partner network in Mexico, its certifications for moving goods across the border, and its finely tuned logistics processes, Ryder can move loads from Mexico to U.S. destinations faster than other service providers. Although the industry average time to cross the border is 18 to 20 hours, Ryder–in concert with its customers–delivers border crossings in an average of two to four hours.

Efficient crossings allow remarkably fast end-to-end deliveries. For example, 99.9 percent of all shipments Ryder moves from Guadalajara to Miami reach their destinations within 69 hours.

Ryder's extensive certifications–including Customs-Trade Partnership Against Terrorism (C-TPAT), Free and Secure Trade (FAST), and Business Alliance for Secure Commerce (BASC)–ensure that the loads it handles move through customs as quickly as regulations permit. By interfacing with its customers' brokerage systems, Ryder gains immediate access to all data required for customs processing.

Ryder works with dedicated customs brokers in the United States and Mexico to provide full brokerage services on a schedule that suits the shipper. "We work with providers who know our expectations and are willing to work long hours to keep the supply chain moving," Salas says.

Ryder also harnesses sophisticated information technology to ensure swift, trouble-free transportation. For each shipment, Ryder establishes a plan to control all the events that will occur from origin to destination. In some cases, these plans are specific enough to track multiple logistics attributes for individual items, such as a part used in manufacturing.

Ryder's centralized Control Tower operations in the United States and Mexico monitor and coordinate the progress of each shipment end to end, in real time, to see that they are moving according to plan and, if not, to make the necessary adjustments. The goal is to ensure that all shipments reach their destinations as efficiently as possible.

MEXICAN ROADS, U.S. STANDARDS

Just as Ryder enforces high standards for its customs brokers, it insists that carrier partners in Mexico deliver the high service quality customers demand.

"We fully control the management of trucking operations with very specific, dedicated partners that fully understand our requirements," Salas says. "We have a strong say in how we want them to operate."

That excellence also extends to the transportation assets that Ryder and its

Ryder provides a full range of services, including warehousing and distribution solutions, to customers in Mexico.

carrier partners operate in Mexico. "We run some of the best equipment on the roads in Mexico," Anderson says. Ryder provides the same equipment maintenance programs in Mexico that it does in the United States.

Ryder also insists that its carriers in Mexico follow a safety program based on U.S. rules, including hours-of-service regulations. Not all carriers in Mexico adhere to such standards. Salas recalls one trucker in Mexico that was competing for the business of a U.S. shipper. It was involved in six accidents per month and lost customers' loads in the process. "The carrier was running drivers for days without sleep, and was involved in many safety and security breaches that we would not allow," he says.

CONSOLIDATION OPPORTUNITIES

A company that works on its own can struggle to realize the benefits of load consolidation in Mexico. But for a company turning to a logistics partner that offers extensive crossdocking facilities and advanced technology for optimizing shipments, money-saving opportunities abound.

Ryder operates a total of nine crossdock facilities on both sides of the border, in Tijuana, San Diego, El Paso, Juarez, Laredo, and Nuevo Laredo. So when, for example, a U.S. manufacturer needs to deliver spare parts to dealers throughout Mexico, Ryder moves truckloads of those parts from the factory to Monterrey, where it crossdocks the load into separate delivery routes for the northern part of the country. The rest of the goods travel in truckloads from Monterrey to Mexico City, where Ryder breaks up the loads and makes deliveries to dealers in southern Mexico.

"That's a very effective use of our crossdock for southbound transportation," Sevilla-Sacasa notes.

LOWER COSTS

A network of top-notch service providers, prompt border crossings, reliable equipment, solid security, and state-of-the-art facilities and technology add up to significant savings. By cutting transit times, reducing the need for buffer inventory, and preventing theft, Ryder makes sure customers get the maximum possible value from their supply chain operations.

A case in point: One company was flying high-value finished products from its manufacturing plant in Mexico to a U.S. port, then shipping the products by ocean carrier to markets overseas. It took about 60 hours to get the goods from factory to port and the cost of using air freight was high.

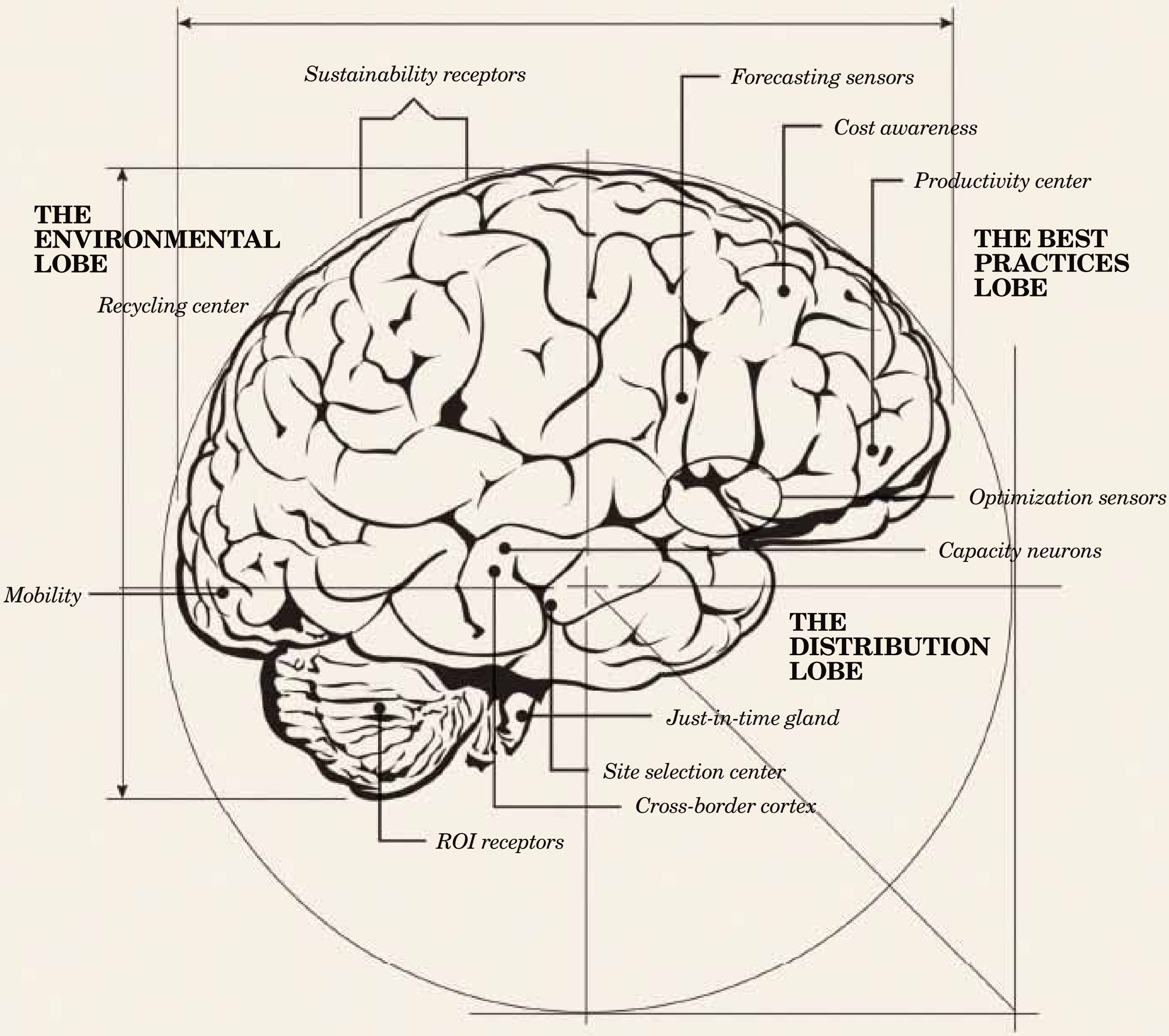
When the company inquired about a less-expensive option, Ryder suggested moving the goods by truck. "We offered a solution of 72 hours," Sevilla-Sacasa says. At just one half day longer than the air-based route, this alternative cost a good deal less. Yet Ryder's door-to-door solution included all the activities involved with transporting the goods across Mexico and across the border. "The company saved about 85 percent by using truck instead of air," he adds.

Ryder's solution only made sense, however, if the goods moved as promised. "The customer had to trust that Ryder could move a truck across the border in a reliable time," Sevilla-Sacasa says. The customer decided to make the change, and Ryder delivered, hitting the 72-hour target 99.9 percent of the time.

VAST OPPORTUNITY

In a volatile economy, a growing number of U.S. firms seeking tighter, more effective supply chains will turn to Mexico for solutions. While Mexico is not without its pitfalls, it does provide efficient access to markets throughout North America and offers many opportunities to save money and time. Working with a trusted partner–one that has the expertise, infrastructure, and commitment needed to gain maximum value from a Mexican operation–a U.S. company doing business south of the border can expect to thrive. ■

FIGURE 1. The Logistics Brain. The portion of a business or organization that constitutes the organ of thought and supply chain coordination, including all the management centers that control the procurement and transportation of raw materials and product.



Relevant, rigorous, and wide-ranging, university studies of supply chain issues focus on real-world challenges.

Brain Trust

Supply Chain Research Labs

by Tamara Chapman

IN THE THREE DECADES SINCE HE FIRST BEGAN CONDUCTING LOGISTICS RESEARCH, John T. "Tom" Mentzer, one of the nation's leading marketing and logistics strategy experts, has seen academic inquiry take on a new shape and personality.

"When I started, logistics research was operations focused," Mentzer says. "That element is still there, but universities are increasingly exploring the role logistics plays in the larger arena."

Today, cutting-edge logistics researchers are asking questions that might have seemed outsized–perhaps even esoteric–to their counterparts from earlier eras. Where researchers once tackled basic challenges–how do you move products from Point A to Point

Tom Mentzer leads the University of Tennessee at Knoxville's top-ranked supply chain and logistics research program.

B cost effectively?–today's scholars are taking on grander queries: What happens in logistics that delights the customer? What effect does knowledge management have on the supply chain? What happens if one firm knows more than its competition? What role do leadership and "transformational followership" play in the supply chain? What makes retailers stay loyal to manufacturers?

"Today's researchers are still operational, but we are more strategic," Mentzer says.

And, he adds, more relevant. Even in these pragmatic times, professors still debate the age-old question: Should logistics research be rigorous or relevant? Mentzer answers the question succinctly: "Why choose?"

Relevance is defined differently by various scholars. As you'll see in the following examples, at some institutions, the link between industry's immediate needs and the research interests of the faculty remains tenuous. At others, it drives the agenda.

In a Logistics State of Mind

TEXAS A&M UNIVERSITY

IN THE LONE STAR STATE, THE SUPPLY CHAIN SYSTEMS Laboratory (SCSL), part of the industrial distribution program at Texas A&M University, aims to generate information that can serve industry, the economy, and students and faculty eager to put textbook, classroom, and laboratory knowledge to work.

The lab got its start in response to market developments affecting distributors. "In 1999, we built a consortium of firms and associations to study the dot-com issue, and we quickly found that the dot-coms would fail," says Laboratory Director Barry Lawrence, noting that distributors found themselves increasingly responsible for managing information, functions that the dot-coms were, theoretically, working to enhance.

The lab was created, in part, to conduct the research that distributors would need to make a smooth, productive transition into the digital world and to measure their supply chain performance. Under Lawrence's guidance, the lab brought together businesses and associations to present researchers with a mix of questions, some particular to a specific firm, others germane to the industry as a whole. Under this model, businesses would fund the research and supply the data. The Texas A&M researchers, meanwhile, would analyze the information and present it for industry's benefit, all the while adding to the knowledge base and developing a considerable pool of information for future projects.

Just as important, the information would help educate tomorrow's business and academic leaders, many of whom work side-by-side with faculty to crunch the numbers and interpret the data.

The initial research consortium consisted of 10 private and non-profit organizations, including the National Electronic Distributors Association. The first topic they took on involved just-in-time inventory strategy.

"The early just-in-time (JIT) movement in the United States was handled sloppily," Lawrence recalls. As retailers sought to cut inventory and manufacturers sought to move goods, "the distributors got buried in inventory," he says.

"The trouble was, distributors hadn't been confronted with being inventory specialists. With JIT, they had to learn to get inventory under control," Lawrence adds.

This dilemma spawned as many as 100 research projects on inventory stratification–projects that resulted in the development of tools distributors could deploy for immediate benefit. The initial projects, in turn, led to intensive research into network optimization and best-practice methodologies.

A Proactive Approach

After several years of conducting studies based on industry challenges, Lawrence and his team decided they wanted to shift focus, continuing their work on current issues but addressing those peeking over the horizon as well.

"We wanted to change the dialogue a bit," Lawrence explains. Rather than having the distribution sector present his team with questions, he wanted to approach them and propose work that would help them anticipate issues. The big challenge, he knew, would be securing funding for work with long-term, rather than immediate, applications. What one entity could, or would, underwrite work of this scope?

With that in mind, Texas A&M researchers identified several topics–including optimizing sales and marketing, and enhancing distributor profitability–likely to affect distributors in the near future, then created a series of research consortiums. These consortiums consist of two or more companies, trade associations, universities, or government agencies willing to collaborate and pool resources to develop knowledge and tools that numerous entities can use.

Looking ahead, Lawrence explains, "We knew there would be research solutions, but that they would be hard to achieve." The goal of the research was to present consortium members with a best-practices approach that they could implement ahead of challenges, rather than in reaction to them.

For 2009, SCSL researchers are examining issues associated with the Mexico-Texas trade corridor. The project brings together manufacturers, distributors, logistics providers, and government offices to develop solutions for global supply chain throughput. "That's one consortium without an end," Lawrence says, adding that political and economic events will continually transform the playing field.

To conduct its many projects, the Supply Chain Systems Laboratory employs 10 full-time researchers and draws on the work of 10 full-time industrial distribution faculty and their graduate students. "Beyond that, we have alliances with other departments that grow the footprint to 100 faculty members," Lawrence says.

The lab is aided by a board of industry advisers, comprised of 19 CEOs. "Those companies provide constant feedback," he says, noting that they insist on rigor and relevance.

Innovative Research Examines the Green Supply Chain

While living and working in New Zealand, Diane Mollenkopf, associate professor of logistics at the University of Tennessee at Knoxville, got a sneak preview of how environmental consciousness can shape the supply chain and the marketplace.

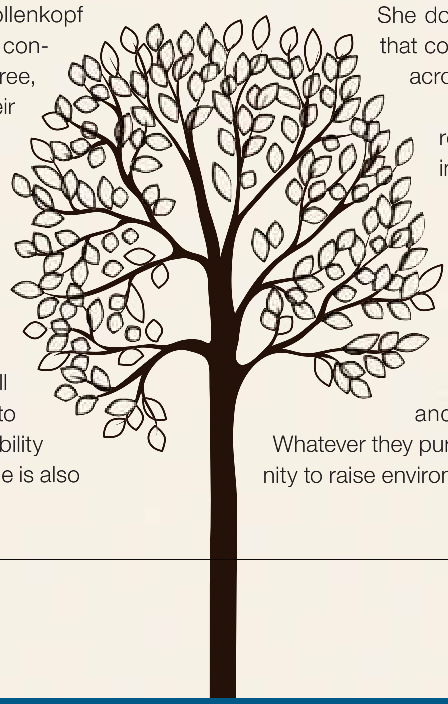
"New Zealand has a reputation for being clean and green," she says, noting that green business practices and supply chains have been at the top of the nation's agenda for years. That's driven, in part, by necessity.

"The country has to import consumer products," Mollenkopf adds, which makes many goods expensive. As a result, "People make do, reuse, keep their cars for 20 years.

"When I returned to the United States, nobody here was talking about green issues," she recalls. In fact, in the logistics field, environmental topics were regarded as a niche interest, something of scant importance in the land of plenty.

People are talking about green issues now, of course, and Mollenkopf is leading some of the discussion. In fact, she's conducting–or, as director of the institution's logistics PhD program, encouraging and supporting–some of the green research that may well help industries prepare for climate change, diminishing resources, and new government regulations.

One topic that particularly interests her is returns management. So much of logistics focuses on getting the product to the consumer. But marketing, Mollenkopf explains, concentrates on convincing consumers that their purchases are risk-free, that if any given item doesn't meet their needs, it can always be returned.



What happens when that product comes back? Can it be recycled? Stripped of its metals and toxic materials before being discarded? How can a company efficiently manage its reverse flow? Can it convert a returned product into an asset?

"In terms of legislation, Europe is well ahead of America," she says, pointing to laws that task producers with responsibility for the disposal of their products. Europe is also leading the way in legislating the reduction of hazardous substances in products.

"Moving to green manufacturing and distribution is catching on now in the United States, particularly with global firms," she says.

Still another research project–a partnership with some university colleagues–kicks off this summer. The project team aims to investigate the relationship among three key supply chain issues facing industry: globalization, lean processes, and the green movement.

"How do firms balance these three complementary and sometimes contradictory strategies?" Mollenkopf asks. "There are no easy answers."

Perhaps not, but the project team expects to uncover some useful practices. They'll begin by conducting focus groups with representatives from different companies. After analyzing the data they collect, researchers will embark on phase two of their project. "From there, we want to move into an in-depth study of some firms that seem to be leading edge," she says.

That will involve talking with representatives from these firms, as well as with their suppliers and customers.

"Where it will lead, we're not sure," Mollenkopf says. She does expect to identify several practices that companies can adopt to create synergies across the three issue areas.

Work like this may well help companies rethink their business models in changing times. Mollenkopf expects to see the most resourceful develop environmental strategies that ensure their sustainability. Some may discard planned obsolescence in favor of service and product upgrades that continue their relationship with the customer. Still others will re-examine their distribution networks and warehouse management systems. Whatever they pursue, she says, "there is a lot of opportunity to raise environmental consciousness."

At the University of Nebraska-Lincoln's RFID and Supply Chain Logistics Lab, Director Erick Jones leads research designed to solve industry challenges.

Discovering Solutions

UNIVERSITY OF NEBRASKA–LINCOLN

ERICK JONES, DIRECTOR of the RFID and Supply Chain Logistics Lab at the University of Nebraska-Lincoln (UNL), believes supply chain research should either offer solutions, or the fodder for solutions, to industry challenges.

Before pursuing his doctorate, Jones worked in industry for 14 years, including a stint with Arthur Andersen. When that firm's fate was sealed by the 2001 Enron financial scandal, the out-of-work Jones decided to complete his engineering studies. That led to a faculty appointment in UNL's College of Engineering.

Jones' RFID and Supply Chain Logistics Lab partners with a host of corporations and government agencies–from UPS to NASA–to facilitate the use of RFID in diverse operations. One project, for example, looks at embedding RFID tags into the license plates of commercial vehicles. Another project featured a collaboration with the Mechanical Contractors Education Research Fund and the Waldinger Corporation, one of the nation's largest mechanical, electrical, and sheet metal contractors. Waldinger supported the project by giving the research team access to its managers and job sites.

The objective of the research was to prove the usability and flexibility of RFID technology in the mechanical construction industry. The findings have ramifications for both the construction industry and the development of RFID.

Some of Jones' work has direct applications not just for industries, but for geographic regions. For example, his research on network models is aimed at helping U.S.-friendly international companies make intelligent decisions about establishing a Midwestern distribution base.

It may not show such firms precisely where to build a warehouse, but it will provide information about which transportation networks interface, what costs are associated with various transportation options, and which offer best access to markets. "If we want to import jobs," Jones says, "work like this is crucial."

So crucial that he strives to ensure that his projects filter down to industry within an accelerated time frame. Traditional science and engineering research often takes 10 years to reach the development stage. "My research goals are to be usable with industry within three to five years," he says.

Give and Take

UNIVERSITY OF TENNESSEE, KNOXVILLE

ALTHOUGH CONTROVERSIAL IN SOME PURIST CIRCLES (many critics see little difference between industry-academia collaborations and consulting), the give and take between researcher and industry is increasingly common and increasingly crucial to businesses. From Tom Mentzer's vantage point at the University of Tennessee at Knoxville, relevant research needs to draw on the business world for its data. In exchange, it provides the business community with information that enhances the development of best practices.

"Companies are my laboratory," he explains. His research does not provide information that is specific to any one firm–a roadmap, say, for Company X to address its problems. Rather, it provides "generalizable" information applicable to a vast number of settings.

For example, an examination of the risk factors associated with relocating operations to Asia might look at everything from port capacity to the incidence of container loss at sea. What it won't do is zero in on the company-specific supply chain questions that a firm might need to ask before embarking on an overseas venture.

Diane Mollenkopf, associate professor of logistics and director of UT Knoxville's logistics doctoral program, recruits students who can contribute real-world experience.

Open Communication

In the course of conducting this research, Mentzer and his colleagues often develop tools that businesses can use to assess and improve their operations. For example, the logistics team at the school developed a cutting-edge tutorial that provides a means for evaluating the capabilities of forecasting software. Rather than treat this as a proprietary product, Mentzer saw a chance to share useful information with the business community. He opted to offer unfettered access to the tutorial.

To ensure that industry leaders can tap into the new ideas percolating at UT Knoxville, the logistics and supply chain faculty introduced a series of forums that showcase the latest research. The supply chain forums were designed "as a vehicle where students, faculty, and business leaders can get together to talk about issues," says Mentzer.

As many as 70 companies take advantage of the opportunity. At some point during the forum, Mentzer asks company participants to name the pressing issues that face them. "One year later," he says, "that information is the subject of conversation at a forum."

Companies pay to participate in the forums–in fact, they fund some of the research. That occasionally creates a misunderstanding about the purpose of the work, Mentzer explains, noting that executives have been known to press for research covering a challenge particular to their operations. When that happens, other members of the forum are quick to police the self-absorbed, reminding them that "we're here to talk about bigger issues," Mentzer says.

Student Background

At UT Knoxville, the emphasis on big issues and their relevance to business is reinforced by the PhD program's recruiting policies. Diane Mollenkopf, associate professor of logistics and director of the logistics doctoral program, prefers PhD candidates well-versed in the ups and downs of business life and the culture of academe.

"One of our prerequisites is that the PhD students we bring in come from industry," she says. The ideal student has a foot in both worlds–committed to contributing to the discipline but also eager to generate knowledge that can be put to use.

This approach results in work that offers far different information from a report generated by a consultant or troubleshooter analyzing a single company's operations. "We ask more 'why' questions," Mollenkopf says. "Why is this happening in the business world?"

Jones agrees, noting that university research provides the business community with unbiased information from a reputable and independent source–information that isn't tailored to please or shaped to complement the views of a client. "When we're doing research," he says, "the answer is the answer." ■

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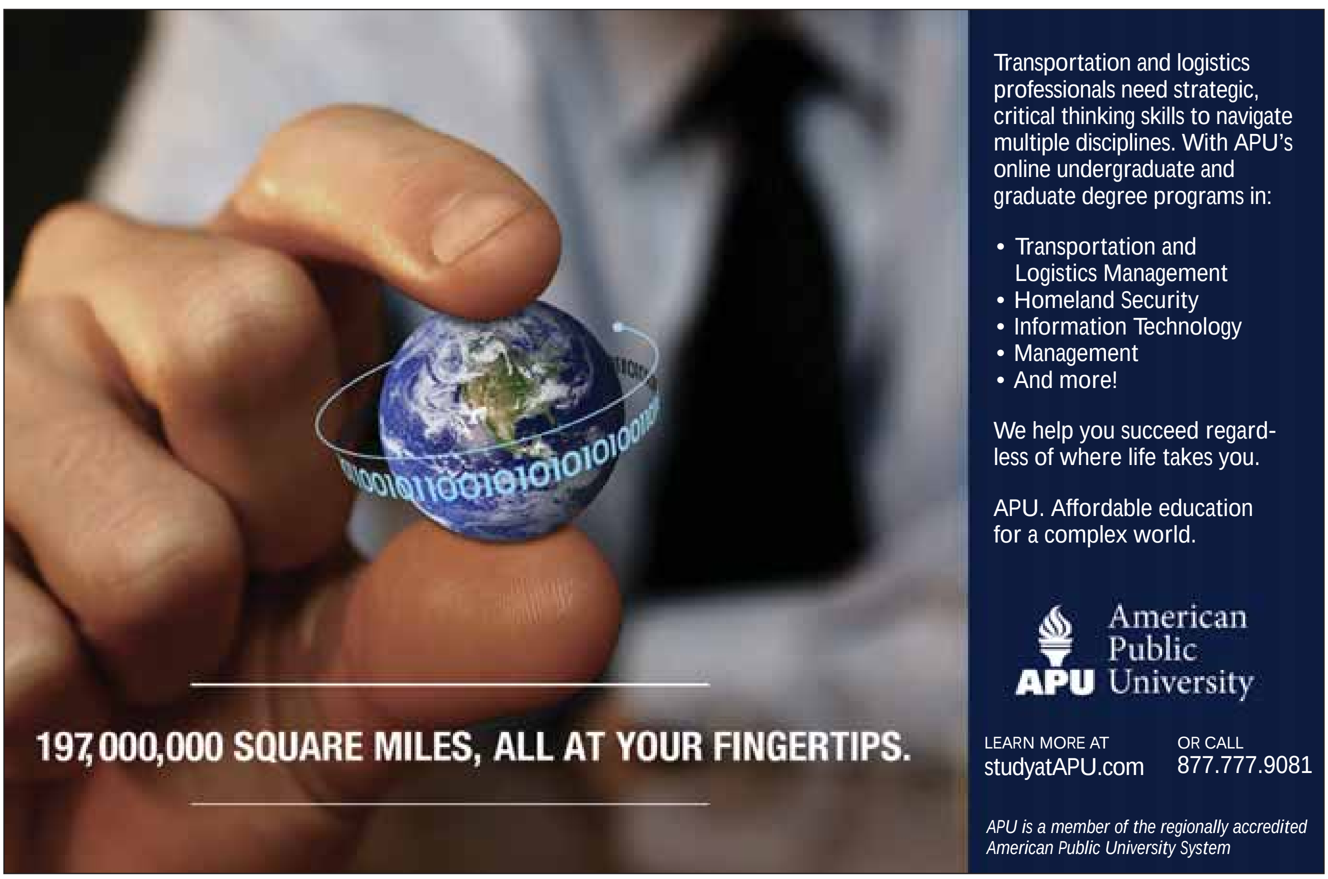
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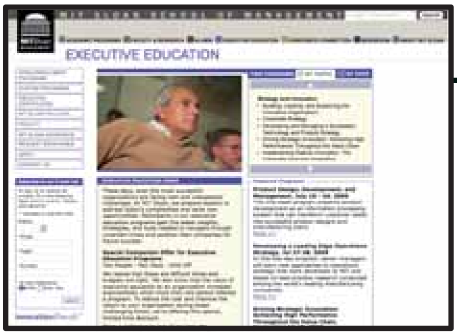

MIT Sloan School of Management • mitsloan.mit.edu/execed

The MIT Sloan School of Management, based in Cambridge, Mass., is one of the world's leading business schools – conducting cutting-edge research and providing management education to top students from more than 60 countries. What makes the MIT Sloan community so dynamic is the absence of boundaries. Invention is cross-cultural, multi-disciplinary, inter-generational, and a result of one key common denominator: excellence. Members of this community believe strongly that there's no point in striving for anything else.

Northeast Wisconsin Technical College • www.nwtc.edu

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Riverside Community College
www.academic.rcc.edu/logisticsmanagement

The Logistics Management Program at Riverside Community College (RCC) Norco Campus includes both certificate and Associate of Science degree options. Courses within RCC's Logistics Management Program include: Principles of Logistics, Purchasing Management, Freight Claims, Logistics Contracts, Transportation and Traffic Management, Warehouse Management, Inventory Management, Computerized Logistics, and International Logistics. The academic Logistics Management Program is part of an array of services offered by the RCC District designed to support the logistics business community.

University of Arkansas – Walton COB – Graduate School of Business
http://gsb.uark.edu

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

University of Denver (ITI) • www.du.edu/transportation

The Intermodal Transportation Institute (ITI) was established in 1991 as the University of Denver's Center for Transportation Studies to promote the vision of sustainable transportation systems worldwide. ITI's mission is to promote a global, ethical, seamless intermodal transportation system through educational programs, research projects, and outreach activities; to serve as a "think and do tank" in collaboration with other units at the University of Denver and in partnership with industry, government, academia, and the public; and to support the mission and goals of the University of Denver.

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Expedited Ground – TMS

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WHAT'S NEW: EuropeXpress airfreight service.

THE VALUE: Intended to speed transfer in handling terminals, EuropeXpress is available for shipments weighing up to 175 pounds with no special handling requirements. Dedicated flights prevent peak-hour bottlenecks, and shipments are forwarded as e-freight without physical paperwork.

www.sascargo.com
✆ 973-849-3300

UPS Freight

WHAT'S NEW: Added direct routes to and from northeast Kansas.

THE VALUE: Expedited transit times allow next-day service from Manhattan, Salina, and Marysville, Kansas, to Kansas City, St. Louis, Wichita, Tulsa, and Des Moines. As a result of the direct routing, Houston, Nashville, and New Orleans fall into an expanded two-day window from the three northeast Kansas locales. In addition, freight earmarked for the area from Los Angeles and San Diego in the west and Norfolk and Richmond in the east arrives within three business days.

www.ltl.upsfreight.com **✆ 800-333-7400**

XTRA Lease

WHAT'S NEW: The 2009 version of the *Size & Weight Guide*.

THE VALUE: XTRA Lease's free annual guide provides up-to-date resource material for managing size and weight

To learn more, contact these companies directly. Remember to mention this issue date and page to get the right information.

legal limitations. It contains state-by-state listings of size and weight regulations, as well as details on where to register for hazardous materials/waste and overweight, oversize permits.

www.xtralease.com ✆ 800-367-9872

TransGroup Worldwide Logistics

WHAT'S NEW: A logistics center in Nogales, Ariz.

THE VALUE: The new facility provides transportation, warehousing, and distribution services, with specialization in transborder operations, working with the maquiladora industry and U.S./Mexico customs.

www.transgroup.com ✆ 520-761-3910

American Airlines Cargo

WHAT'S NEW: Service from Dallas to Madrid.

THE VALUE: Daily nonstop Boeing 767-300 service from Dallas-Fort Worth International Airport to Madrid Barajas International Airport complements existing service between New York and Barcelona, and between Miami and Madrid.

www.aacargo.com ✆ 800-CARGO-AA

TNT Express

WHAT'S NEW: A consolidation and distribution center in Milan, Italy.

THE VALUE: Located beside the runway of the Milano Linate city airport, TNT's 430,000-square-foot Milano Mega facility boasts 188 loading docks and operates 24/7 to sort international import/export traffic throughout Italy.

www.tnt.com ✆ 800-558-5555

Management Dynamics

WHAT'S NEW: An office in Zurich, Switzerland.

THE VALUE: Serving the German, Swiss, and Austrian markets, Management Dynamics' Zurich office supports shippers in the region and meets the growing demand in Europe for international logistics and trade compliance software solutions.

www.managementdynamics.com ✆ 201-935-8588

Estes Express Lines

WHAT'S NEW: A terminal in Hope, Ark.

THE VALUE: Located on Highway 29, the new terminal, which provides direct service to the Texarkana area, has nine employees and a 12-door capacity to manage incoming and outgoing freight.

www.estes-express.com ✆ 804-353-1900

Aspen

WHAT'S NEW: A warehousing facility in Ontario, Calif.

THE VALUE: The ambient and refrigerated warehouse serves the southwestern United States and acts as a transfer location for eastbound products coming through Southern California's ports.

www.aspenlogistics.com ✆ 800-741-7360

DHL

WHAT'S NEW: An apparel-focused facility in Hong Kong.

THE VALUE: The DHL Fashion Competency Center, based in the new 120,000-square-foot DHL Global Forwarding office in Hong Kong's Kowloon Commerce Centre, develops customized logistics products and solutions for the fashion and apparel sector, and houses a core team of industry experts providing consultancy services to apparel customers in North Asia Pacific.

www.dhl.com ✆ 800-CALL-DHL

Fleet Locks Inc.

WHAT'S NEW: A fuel cap lock.

THE VALUE: The heavy-duty aluminum lock secures truck fleets by preventing fuel siphoning, tank contamination, and fuel cap theft. The tamper-proof door hinge cannot be removed, and the edge of the door fits into the housing for added security.

www.fleetlocks.com ✆ 866-995-2458

5 Horizons Group

WHAT'S NEW: An office in Asia.

THE VALUE: Located in Dongguan, China, the new 5 Horizons Group office provides U.S. companies with sourcing, quality control, production, and logistics management services.

www.5horizonsgroup.com ✆ 314-272-4366

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WHAT'S NEW: A heavy-duty scrap chopper.

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www.sweed.com ✆ 800-888-1352

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www.tharo.com
800-878-6833

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www.oatsystems.com 800-257-5540
www.sap.com 800-872-1727

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WHAT'S NEW: A global on-demand transportation management system.

THE VALUE: The alliance gives North American and European shippers Software-as-a-Service access to MercuryGate's TMS and Transwide's electronic transport execution suite.

www.mercurygate.com 919-469-8057
www.transwide.com 617-531-5890

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ChemLogix LLC

WHAT'S NEW: A chemical transportation and logistics blog.

THE VALUE: The blog provides insights on topics related to chemical transportation and logistics services, and invites commentary from the chemical logistics community.

http://blog.chemlogix.com
630-579-8200

The Warehousing Education and Research Council (WERC)

WHAT'S NEW: A facility benchmarking tool.

THE VALUE: Warehousing and distribution professionals can compare their company data to WERC's annual warehouse metrics survey results, viewing

benchmarks such as firm size, revenue, and operation and industry type.
www.werc.org ✆ 630-990-0001

software

Quantum Retail Technology

WHAT'S NEW: Enhancements to the *Q* inventory management and optimization solution.
THE VALUE: Available in both on-premise and on-demand formats, *Q* offers retailers long-range forecasting and real-time processing capabilities.
www.quantumretail.com ✆ 888-801-8198

ShipNomics Corporation

WHAT'S NEW: A Software-as-a-Service version of its transportation management system.
THE VALUE: Designed for domestic and international shippers, *Transportation Manager Pro* provides visibility to air, ocean, rail, and truck shipments to help reduce operating expenses.
www.shipnomics.com ✆ 801-231-3536

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THE VALUE: The *Asset Tracking and Maintenance* solution automates asset data collection and improves the tracking, visibility, and reporting of fixed, capital, and physical assets.
www.takesupplychain.com ✆ 800-324-5143

Robocom Systems International

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- **DB Schenker** pg. 24
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- **American Public University (APU)** pg. 78
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THE LAST MILE

A Real Fish Tale

European scientists are engineering the next generation of robotic fish to help port authorities monitor water pollution.

Roboticists at England's University of Essex have captured the essence of fish – hook, line, and sinker. In turn, schools of five-foot-long mechanized fish will be patrolling the Port of Gijon in Spain to help researchers monitor water pollution and other vital data.

The $28,000 battery-operated robots work by mimicking the movements of a fish's tail. They are equipped with sensors to keep track of oxygen levels in the water and detect oil slicks spilled from ships or contaminants pumped into the water from underground pipes.

The harbor-swimming fleet, which is sponsored by a $3.6-million grant from the European Union, will gather and transmit information to the port's control center and help create a three-dimensional pollution map of the area.

The fish roam without remote guidance thanks to sensors that help them avoid obstacles such as rocks or moving ships. They can also swap navigational information with each other using a form of sonar.

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