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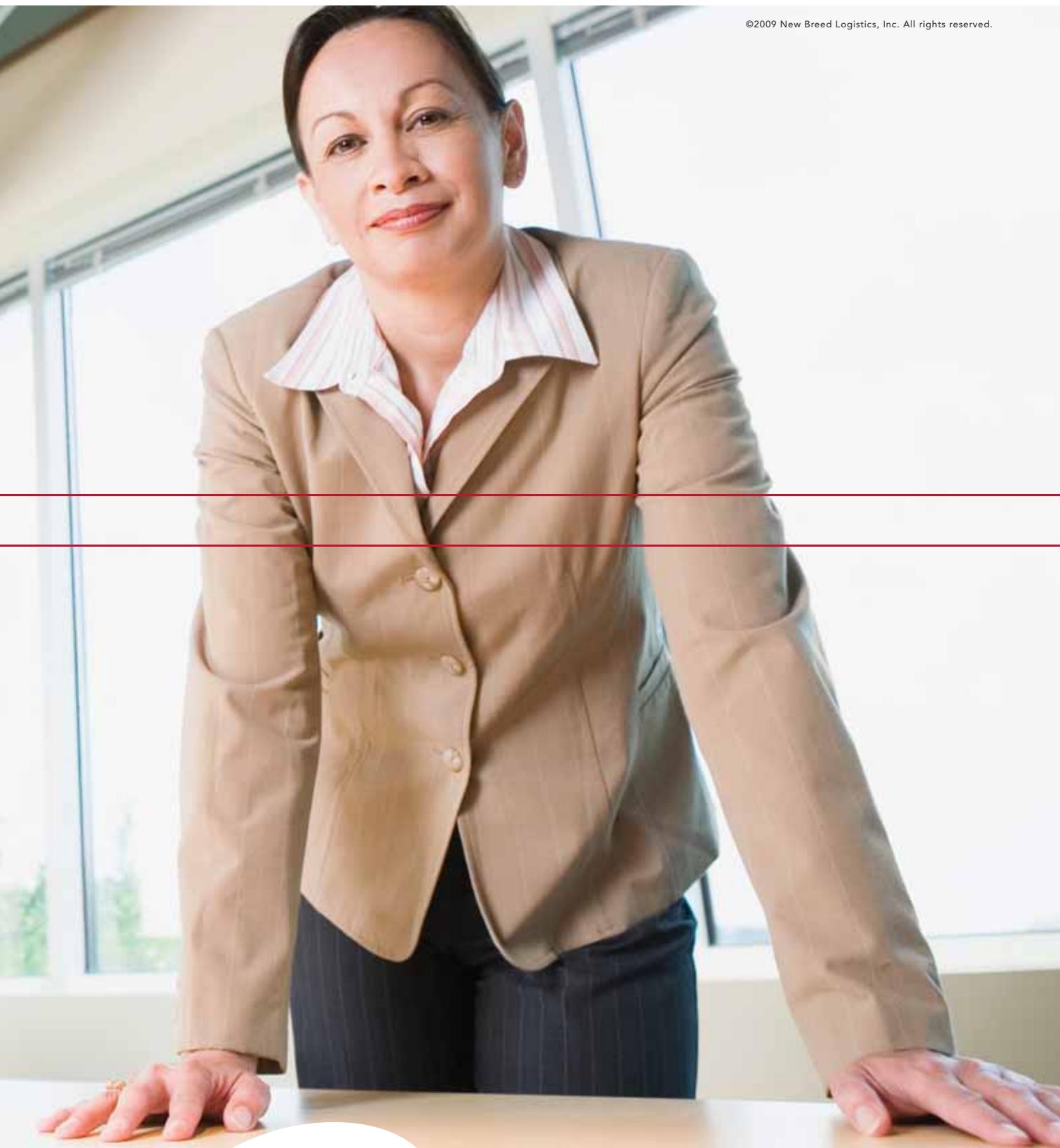
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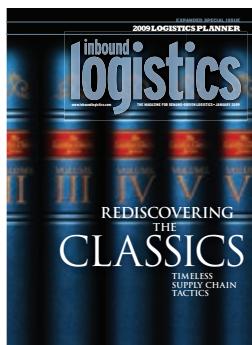
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# 10 TIPS

## STEP-BY-STEP SOLUTIONS



by Deborah Catalano Ruriani

## Selecting a Voice-Directed Picking System

If you want to reduce errors, improve productivity, and increase accuracy in the warehouse, a voice-directed picking system may help. Choosing the right product to meet your company's needs, however, can be a challenge. Donal Mac Daid, vice president of product marketing at Atlanta-based logistics software provider Aldata Solution Inc., offers advice on selecting voice-directed picking technology.

### 1 Know what kind of system you need.

Determine whether you want a dedicated voice device or a multimodal personal digital assistant (PDA). Dedicated voice devices are single-purpose, and do not offer the flexibility of PDAs. You may prefer a system that allows operators to use voice as well as input data on the device's screen or via bar-code/RFID scanning.

### 2 Make sure your system is interoperable.

Choose a voice picking technology that can work with a variety of warehouse management system packages and languages. This will increase the voice picking system's flexibility.

### 3 Look for systems that do not require voice recognition training.

A good system should be usable by any

operator right out of the box. In a typical warehouse or distribution center, this reduces costs associated with seasonal/temporary help training and enables operator interoperability.

### 4 Consider operator fatigue.

Operators using dedicated voice systems can get fatigued, leading to errors. PDA systems allow users to switch between voice-directed and on-screen modes so they are more engaged and productive.

### 5 Try before you buy.

Be sure to conduct a proof of concept before committing to any system. Build out your test bed in a real business environment. If you're doing order picking, test your current system against your prospective voice picking operation and measure the results.

### 6 Flexibility is a must.

Consider a system you can implement throughout the entire warehouse. It should have the flexibility to be used at receiving docks, on picking vehicles, at pick zones, and at shipping docks. Investing in versatile technology will reduce maintenance costs.

your purchase as a chance to standardize on one type of system, from warehouse to store shelf. This approach reduces maintenance costs and limits the number of supplier contracts.

### 8 Make sure the system can be easily upgraded.

Select a voice-directed picking system that enables you to leverage existing investments but also allows you to take advantage of new processes and retail best practices. It should be simple to add RFID, traceability, or any new process.

### 9 Set your sights high.

Ask your potential vendor to develop a detailed return on investment report based on your warehouse and specific requirements. As a guide (and depending on how effective your current system is), deploying a new voice-directed picking system should reduce error rates by 80 percent and improve productivity by 30 percent.

### 10 Don't be a pioneer.

Before you buy a voice-directed picking system, be sure to diligently check each vendor's references. Find out what other customers they are working with, whether the system is in production, where it is produced, and how many operators it services. ■

## Same Day Air

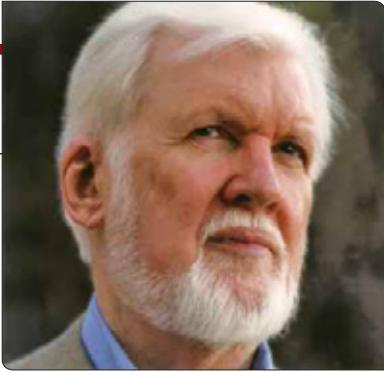


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## [ SC PERSPECTIVES ]

BY ROBERT A. MALONE

Contributing Editor, Inbound Logistics  
RMalone@inboundlogistics.com

### The Intellectual Risk of Complexity

As multiple sourcing strategies continue their inexorable march across the world, the resultant supply chain complexity makes it more difficult for companies to protect their intellectual property rights.

**T**he rules of business in a global world are thorny and often intractable. As supply chains grow more complex and outsourcing gains favor, long-range risks become harder to judge, or even understand. One consequence of a complex global supply chain is a subtle shift in the nature of intellectual property and how it factors into supply chain risk management.

What is intellectual property and why should we worry about it? Some see it as a way large organizations repress small organizations. Others see it as a monopoly of rights. Those in a more restrained frame of mind perceive it as a collection of existing laws, rules, and regulations that includes patents, trademarks, designs, and copyrights.

Breaching any one of these rights can lead an organization or individual to take aggressive action against another, making one believe that intellectual property was invented by lawyers. It is assumed that a company wants to protect its intellectual property as it might be, in fact, all that a company actually has.

How can outsourcing affect intellectual property? Let's look at Boeing and its suppliers as an example. Boeing's 787 Dreamliner project, which has been called the "UN of sourcing," seemed like a good idea when it started as aircraft development designation

7E7 in January 2005. As the aircraft was designed and contracts were inked, parts and sub-assemblies were sourced from here, there, and everywhere. The so far ill-fated 787 is two years behind schedule, and counting.

The Dreamliner's tails are being made in China, its ailerons are from Australia, and horizontal stabilizers come from Italy. Japan supplies the fuselages and wings, Canada the fairings, and passenger doors are manufactured in France. Sweden is creating the cargo doors, General Electric and Rolls Royce are building engines, and to keep it simple, floor beams are sourced from India. The nose sections are being made in Wichita, Kansas. Final assembly takes place in Everett, Wash.

When big and small parts are delivered from thousands of miles away and come from different cultures, mind sets, and political persuasions, fixing supply chain glitches is not easy. Nor is maintaining control

over intellectual property and competitive intelligence.

When does knowing how to design and build a 787 tail become knowing how to design and build a plane? In order to manufacture the tail, Chinese suppliers have to know a few things about the plane in general and what the tail connects to in detail.

Boeing CEO Jim McNerney is hot on China as a supplier, and he is considering designing and building the next plane there. Such a decision would simplify the logistics process, but would also open up an intellectual property can of worms. Litigation may be a legitimate recourse in the United States, but it is assuredly more difficult elsewhere.

Here's the rub. Supply chains are complex. Why make what is complex more complex?

Boeing is learning this lesson the hard way with the long-awaited debut of its Nightmareliner. There are economical justifications for outsourcing complexity, just as there are competitive reasons for keeping suppliers and business intelligence close to the vest. Global companies have to factor in intellectual property risk as part of the total landed cost of orchestrating offshore supply chains. For many, that's an entirely new can of worms. ■

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# READER PROFILE

by Merrill Douglas

## Captain Scantastic



### X-RAY IMAGE

**NAME:** Cliff Hooper

**TITLE:** Vice president of logistics

**COMPANY:** Genesis Medical Imaging, Huntley, Illinois

**PREVIOUS EXPERIENCE:** More than 26 years in the U.S. Air Force, including 12 in logistics operations and 14 as a logistical planner; provisioning engineering supervisor, Hughes Aircraft Company, missile and radar systems divisions; vice president of logistics, R Squared Scan Systems/Innoserv.

**EDUCATION:** B.S., occupational education, logistics, Southern Illinois University, 1986.

**C**liff Hooper has been managing inventories since high school. He started out working for a firm that installed and serviced jukeboxes, pinball games, and slot machines. Later, he applied his logistics smarts to aircraft and war planning functions for the U.S. Air Force, and to missile and radar systems for Hughes Aircraft Company. More recently, he has been getting service technicians the parts they need to keep medical imaging equipment up and running.

Hooper is vice president of logistics at Genesis Medical Imaging, an independent service organization that works on computed tomography (CT) and magnetic resonance imaging (MRI) scan equipment. Called out of retirement to take the job, Hooper started commuting from his home in San Antonio to company headquarters in Huntley, Ill., where Genesis keeps most of its spare parts.

Genesis provides 24/7 service throughout the country. When a customer calls with a problem, the company dispatches a service engineer, who makes a diagnosis. If parts are needed, the engineer calls the logistics department, and Hooper and his team make sure the parts arrive as soon as possible.

Genesis ships most parts for repairs via FedEx's overnight service or on commercial airlines. But sometimes plane-grounding weather or inconvenient geography demands that the company "hot shot" the parts by other means. "Say we have to get a part to a

location in lower Kentucky that's not adjacent to an airport," Hooper says. "We'll call a motor carrier to come pick up the part and deliver it."

Hooper is working on a program to put more spare parts inventory in engineers' hands. "That will prevent the use of expedited shipping, and will improve the system's support capability," he says.

Besides getting parts to technicians quickly, Hooper needs to manage transportation costs. A coup he pulled off some years back, while working at R Squared Scan Systems, shows his talent

### The Big Questions

#### What do you do when you're not at work?

When I'm not busy tackling my wife's 'Honey-do' list, I paint birds and butterflies on white Texas limestone. I also try to keep up with my eight grandkids and all their activities.

#### Ideal dinner companions?

My wife and grandkids.

#### What's in your briefcase?

Family photos, an airline ticket, a list of systems that I maintain for Genesis, a notepad, and remote attachments for my computer.

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

Helping kids by providing education, training, or mentoring.

in this area. The company was shipping replacement parts from California via commercial airlines and three levels of FedEx overnight service, which were flat-rate services at the time. "Monthly transportation costs ranged from \$80,000 to \$100,000," Hooper says.

To save money, Hooper switched all his shipments to FedEx's next-day afternoon delivery service. But instead of waiting for couriers to bring parts to their doors, technicians stopped first thing in the morning at their local FedEx offices, where packages stood ready to retrieve.

"That reduced costs to \$30,000 to

## Whether in support of military systems or patient care, Hooper's logistics career provides him with a source of continual excitement.

\$40,000 a month," he says. FedEx has since changed to distance-based pricing, and Hooper no longer uses this technique.

Later, Hooper opened a parts depot in Memphis, near FedEx's national hub. "Then I could ship parts out until midnight," he says. "That greatly improved field service support."

Whether in support of military systems or patient care, Hooper's logistics career provides him with a source of continual excitement—kind of like those arcade machines he worked on as a teen.

"There's never a dull moment," he says. "Just when you think you've met one major challenge, another one rears its head. That's what makes it fun." ■

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# TRENDS



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## How Green is Apple?

**T**he green movement is many things to different parties. But the common element all environmentally conscious supply chain practitioners and consumers should take a vested interest in is transparency—from source to *self*.

Environmental watchdog Greenpeace, whose mission is to bring clarity to environmental issues and threats, knows something about transparency. Proof to point, the organization recently lauded Apple Inc. for distancing itself from the U.S. Chamber of Commerce after the Washington lobby publicly opposed climate change legislation (H.R. 2454, *The American Clean Energy and Security Act of 2009*) circling Capitol Hill.

In a five-point statement on energy and the environment, the Chamber summarized its position: “There should be a comprehensive legislative solution that

does not harm the economy, recognizes that the problem is international in scope, and aggressively promotes new technologies and efficiency. Protecting our economy and the environment for future generations are mutually achievable goals.”

Apple was joined by the likes of Nike and Johnson & Johnson, which have retained their respective memberships but censured the Chamber for its stance. Greenpeace was also quick to suggest other companies, such as IBM and Microsoft, should follow suit.

In an open letter to Chamber President Thomas Donohue, Catherine A. Novelli, Apple’s vice president of worldwide

by Joseph O'Reilly

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## Risky Business

Risk comes with the trade, but so does foresight. AMR Research's quarterly *Supply Chain Risk Survey* reports that 44 percent of U.S. manufacturers and retailers believe the recovery cycle is the biggest risk in 2010 because of potential commodity price increases, workforce reductions, and problems meeting new demand with constrained capacity. By contrast, only 23 percent of manufacturers and retailers are worried that the recession will continue. Among other pressing concerns:

**33%** cite the United States as contributing **the most risk to their supply chains**. China (26 percent) and Latin America (14 percent) also contribute to supply chain risk.

**31%** identify concerns with **supplier product quality failures** as the top risk.

**23%** report supplier management as **the most successful technology** used to mitigate risk.

**12%** indicate that **more than half of their suppliers have experienced disruptions** that impacted their ability to serve them.

**2%** are worried about the impact of **piracy** on business.

government affairs, explained why the company dropped its association. "Apple is committed to protecting the environment and the communities in which we operate around the world," she wrote. "We strongly object to the Chamber's recent comments opposing the EPA's effort to limit greenhouse gases.

"Apple is working hard to reduce our own greenhouse gas emissions by relying on renewable energy at our facilities and designing more energy-efficient products for customers," she added. "We have undertaken this unilaterally, and without government mandate, because we believe it is the right thing to do."

### QUESTIONS ARISE

Apple's commitment to sustainability in the United States is commendable. But its unequivocal position raises important questions regarding the ethos of "green citizenry." How far does social consciousness extend? Does this unilateral pledge apply to coal-powered manufacturing plants in China, where iPods, Macs, and countless other products are assembled at cut-rate costs? Or to Chinese laborers who breathe coke-choked smog?

To its credit, Greenpeace has previously challenged Apple on its recycling procedures and destruction of potentially toxic components and products after they expire—challenges that the computer manufacturer has addressed. Still, Greenpeace's recent praise exposes an oft-overlooked double standard.

It's no secret that Apple, Nike, and Johnson & Johnson rely on cheap labor in China and elsewhere to manufacture product. All three companies have encountered their fair share of criticism in the past regarding product quality and labor practices.

Environmental sustainability shares a similar ethical bond and many favored outsourcing countries are far more polluting and wasteful than a United States without cap-and-trade legislation. But green energy doesn't power their economic engines. The *other* green does.

By publicly addressing its obligation to green best practices in the United

States, then cementing its stance by dropping Chamber of Commerce membership, Apple exposed itself to criticism on the supply side.

As the Chamber alluded to in its statement, climate change is an international problem. In a truly green supply chain, equal standards should exist on both sides of the global divide; offshore supply chain partners should be pulled into corporate ethics compliance; and sourcing strategy should be a metric for sustainability. What's green for U.S. consumers should be green for Chinese suppliers and laborers.

Consider this analogous example regarding Apple's use of labor. Umair Haque, director of the Havas Media Lab, a strategic advisory, raises an interesting point in a July 2009 posting on Harvard Business School's blog. In his posting, *What Would a Fair-Labor iPod Cost?* Haque ponders what an iPod might cost if it were produced stateside, and how that might impact consumer spending, the economy, and Apple.

By comparing U.S. and Chinese labor compensation, he derives a rough estimate of the cost differential: An American-made iPod Classic would be priced "just" 23 percent (or \$58) more than one made in China.

"If goods cost what they should, we would consume what we could authentically afford, instead of over-consuming what we couldn't," Haque writes. "If Apple's prices reflected real human costs, perhaps yesterday's unsustainable large macro imbalances wouldn't have built up in the first place. And that, from an economic point of view, would be good for everyone."

Haque's supposition, however uncomplicated, is interesting. He considers labor exclusively, disregarding the cost—and carbon footprint—of transporting and handling Apple's product from Asia to the United States; the proximity of suppliers and manufacturers to raw material sources; what customers and Apple might consider "just"; and the U.S. consumer's appetite for new technology.

His conclusion is more telling: "Apple

is a constructive capitalist. It has done remarkably constructive things—on the demand side. It has freed people from the shackles of innovation-stifling monopolies in mobile computing and music, vaporizing evil in market after market.

“Yet, today, Apple faces a new challenge,” Haque adds. “Can it be equally constructive on the supply side? Can it offer even higher-value goods produced to a groundbreaking new set of labor standards for the 21st century? Can it bring production—not just consumption—out of the industrial era, and into a 21st century that demands a better kind of business?”

Extrapolate that idea to sustainability and you wonder, shouldn't Apple make production a greener business, too?

If you consider labor practice and sustainability shared supply chain

**Environmental hubris the likes of which Greenpeace extols doesn't hold water if it's not sustainable across the global divide—if it's not transparent.**

ethics, Haque's point sticks—and pointedly—into Apple's green bubble. On the demand side Apple has surely become a beacon of green awareness, thanks in dual part to Greenpeace's past criticisms and the current marketability of sustainability to U.S. consumers.

Where Apple stands on the supply side is more muddled. Can it be equally constructive introducing green standards to its China suppliers, and countless others? Moreover, if climate change legislation is ratified, will Apple bring more manufacturing back to the United States in the interest of being green?

Apple is very attuned to human user interface. It also knows that pitching green is a necessary strategy for growing its brand in today's competitive market. But environmental hubris the likes of which Greenpeace extols doesn't hold water if it's not sustainable across the global divide—if it's not transparent. Any way you slice it, Apple's greenness falls apart.

*We've raised a lot of questions, and we're looking for more answers. What do you think? Is there a green double standard? Please email your comments to: editor@inboundlogistics.com* ■

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# GLOBAL LOGISTICS

by Joseph O'Reilly



## Wagons West: China's New Reckoning

**S**ometimes adversity yields opportunity. When a major earthquake struck China's Sichuan Province in May 2008, its magnitude was incomprehensible: 70,000 people killed, many more displaced, and widespread annihilation of infrastructure and socioeconomic wellbeing.

But a landscape literally wasted by nature is now quaking and awakening with the tremors of a man-made boom as infrastructure projects and economic development opportunities arise anew.

The Chinese government is hitching its wagon and securing its bullock to westward expansion, opening up new manufacturing pockets in the country's sparsely populated hinterland. The

seismic shift in production capacity to the interior has been ongoing as coastal development in the east approaches critical mass and labor costs rise. Areas such as Chengdu, the capital of Sichuan Province, are reaping the unexpected benefits of media exposure and relief efforts, as well as government and foreign stimulus.

Contractual foreign investment in the region has surged 207.5 percent year on year to \$4.2 billion, according to official figures released by Sichuan's Bureau of Commerce. Chengdu, in particular, has staked its claim in China's Wild West, accounting for 80 percent of the province's total take, with a growth rate of 218.9 percent.

Both domestic and foreign investors are lining up projects and digging into China's relatively poor and underdeveloped southwestern province. At the 10th annual Western China International Economy and Trade Fair held recently in Chengdu, public and private shareholders from China and elsewhere around the world announced 551 signed projects, worth US \$43.3 billion.

Chinese investors contributed to 539 of the projects, which largely focus on the equipment manufacturing, service, and technology sectors. The remaining 12 projects include foreign contractors, with U.S. companies ponying up \$1 billion.

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Siemens intends to set up a Global IT Operation Center in the city to provide better tech support for its customers. Taiwan's Foxconn Group, the world's top maker of outsourced electronics, is looking to invest \$1 billion to build an industrial base in Chengdu, setting up production lines for products such as LED TVs and LCD modules.

With manufacturing stimulus and infrastructure development building, transportation is following close behind. A.P. Moller-Maersk recently announced that it is locating a global service center at the Tianfu Software Park in Chengdu.

The ocean carrier is also drafting plans for a logistics processing branch and document processing center in the

software park that will integrate service operations from Maersk's other branches, covering orders, document processing, and personnel training.

Chengdu has gradually formed a cluster of shared service centers. Numerous world-class companies, including Accenture, DHL, JPMorgan, Volkswagen, Lafarge, Amazon, and domestic players such as Alibaba and Tencent, have set up operations in the city. Maersk

is considering further investments in Chengdu as part of its efforts to expand business in the western market.

Opening Western China to more industrial development will likely have a marked impact on how global businesses source and ship product to and from Asia. German-based rail carrier DB Schenker is already experimenting with a Eurasian intermodal land bridge connecting China to Europe following

## Opening Western China to more industrial development will have an impact on how global businesses source and ship product to and from Asia.

### German Cataloger Mails It In

**T**raditional department stores and mail-order retailers that can't keep up with the Joneses or Müllers—and their shifting buying habits—may find themselves in a similar position as German cataloger Quelle and its holding company Arcandor Group.

The 82-year-old company, and its 128-year-old patriarch, recently announced they were liquidating assets after failing to make the transition to e-commerce.

It's a sign of the times, especially for retailers that span time. Changing consumer habits and the repercussions of a lingering worldwide recession have taken their toll on well-entrenched brands. Global retailers, particularly those that have not adapted their supply chains to online sales and distribution channels, face the same challenges and consequences.

By contrast, in early 2009, U.S. department store chain Macy's discontinued its *Bloomingdale's By Mail* catalog to shift focus to the brand's direct-to-consumer business. As a complement to the exposure of brick-and-mortar stores, the Internet has become the primary vehicle for marketing and channeling goods to consumers. And in the eyes of the evergreen consumer, eliminating paper catalogs and unnecessary waste has become an accepted expectation.

Quelle simply did not have the infrastructure in place to facilitate the tran-

sition to e-commerce—even as it began restructuring its activities and go-to-market strategy in 2007. When the company began losing sales, consumers lost confidence and banks withheld credit.

Not by coincidence, in 2005 the Arcandor Group sold a considerable number of its logistics operations to DHL, the express and logistics subsidiary of Deutsche Post World Net—including its goods distribution center in Unna/Holzwickede.

In Quelle's wake, the Otto Group will likely capture the majority of market share for Germany's retail catalog segment.

Perhaps the Hamburg-based retail conglomerate's pedigree accounts for its enduring success. What began as a shoe mail order firm in 1949 has evolved into a diversified holding company with 23 companies and 50,000 employees in 20 countries. Otto sells shoes and countless other goods; it owns housewares retailer Crate & Barrel; and it has conquered home delivery and fulfillment.

In 1972, the cataloger started its own courier company,

HERMES Delivery Service. Today, HERMES Logistics Group is Germany's largest player in the B2C and C2C segment, apart from the German Postal Service.

The moral of the story? Talk to the Müllers and Joneses—then invest in transportation and logistics.

Sound investments in subsidiaries such as HERMES Logistics have allowed German cataloger the Otto Group to succeed where others have failed.



the Trans-Siberian Railway route. U.S. shippers, too, will need to reevaluate sourcing strategies, transportation routings, and domestic distribution networks as they explore Asia-East Coast sailings through the Suez Canal.

## Steering Toward A Deep Green Sea

In the interest of saving the environment and greening the supply chain, the Rotterdam Port Authority is teaming up with Friends of the Earth Netherlands, a non-governmental environmental organization, to push for more waterborne commerce. The two parties are challenging the maritime shipping industry to drastically reduce CO<sup>2</sup> emissions 30 percent by 2020 and 80 percent by 2050, compared to 1990 levels.

The port and Friends of the Earth Netherlands are calling on the Dutch government to shoulder its responsibilities in the run-up to the climate summit to be held in Copenhagen later in 2009. They are petitioning the government to make every effort to cooperate with other countries and port authorities to introduce international agreements on CO<sup>2</sup> reduction, including making CO<sup>2</sup> reduction part of the Environmental Ship Index (ESI).

The ESI is a voluntary project piloted by the ports of Rotterdam, Amsterdam, Antwerp, Bremen, Bremerhaven, Hamburg, and Le Havre to measure a ship's emissions based on the amount of nitrogen oxide, sulphur oxide, particulate matter, and greenhouse gas it releases. The index would provide a benchmark for the environmental performance of vessels or ships.

The ESI is currently being developed in an international context to encourage the use of clean ships. This can be done, for example, by introducing price incentives to dues that ships pay when visiting ports. The Rotterdam Port Authority plans to use this ESI to encourage ship owners to make their fleets more sustainable and to use cleaner fuels. ■

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# 3PLLINE

by Mitch Weckop

## Is Your 3PL a Brand Builder?

**A** brand represents many intangible aspects of a product or service; it's a collection of perceptions about quality, image, lifestyle, and status. In short, a brand represents a promise made and honored.

When was the last time you challenged your third-party logistics provider (3PL) to help you build your brand? For most shippers, the answer lies somewhere between seldom and never. But when you think of your 3PL as the face of your brand to your customers, the stakes are incredibly high. If your 3PL provider makes a mistake, you own it.

Successful branding programs begin with superior products and services, backed by excellent customer service that permeates an entire organization. Is your third-party logistics provider delivering your brand promise?

Consider the following key areas to assess whether your 3PL is building your brand or giving it a black eye:

■ **Setting common goals.** One of the most important, and often overlooked, factors in assessing the brand-building potential of your third-party provider begins with setting common goals and objectives. Do both sides truly

understand the business needs of all parties—including your customers?

From the tone and manner of customer service representatives to driver appearance at the dock, every brand touchpoint matters. Your 3PL must thoroughly understand each touchpoint to ensure that positive, brand-enhancing policies are part of what you expect from the relationship.

■ **Sharing a culture.** The best 3PL relationships develop when there is corporate philosophical alignment. If one party has a mentality of “good enough is fine,” and the other player has a “dazzle me” expectation, no one will be satisfied.

What is your cultural expectation of your employees? Be sure to partner with a 3PL who can deliver that same expectation for your customers to truly make a brand-enhancing impression.

■ **Establishing transparency.** In today's global economy, complete transparency is incredibly difficult. For a global company, cultural nuances, language barriers, and technology issues often make communications difficult, becoming a barrier to transparency.

Sustainable, strategic relationships require continual improvements and creativity. Much like a good marriage, the best 3PL relationships develop in an atmosphere of open and frequent communication. Is there a mutually beneficial ability to quickly resolve any issues that arise along the way? Trust and commitment are key components in reaching consensus and continuously moving the business in the right direction.

■ **Enjoying the win/win.** Expect your 3PL to be willing to share both risk and rewards. Does your 3PL care about your business as much as you do? Does it allow you to focus on your core competencies and take on complete responsibility for its role in your brand? Is it investing in your success by improving service offerings and upgrading technology?

In today's tough economy, the answer to all those questions should be a resounding yes. It doesn't cost more to expect more from your third-party logistics provider. One thing is certain: Partnering with a 3PL who is a positive reflection on your brand could make an enormous positive impact on your company's future. ■

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# VIEWPOINT

by Don Pulver

## Selecting Pallet Types: One Size Does Not Fit All

**A**t any given time, nearly 1.5 billion pallets transport products of all shapes and sizes throughout the United States. The majority are wood pallets, which have remained popular with supply chain and logistics managers for decades because they cost less than alternative pallets made of plastic or steel.

Because pallets are used across several diverse industries with varied specifications, it is important for logistics managers to avoid falling into the one-size-fits-all mentality. To ensure they are making the best pallet choice, logistics managers should evaluate whether the alternatives could help improve efficiency and reduce costs for their companies' specific applications.

Having a solid understanding of the strengths and weaknesses of each material is critical to choosing the right pallet for the job.

### WOOD PALLET: WHY KNOT?

Wood is still the most common pallet material and is used in many open-loop warehouse environments. Following are some characteristics of wood pallets:

■ **Low upfront costs:** Wood pallets are easily prototyped and relatively

inexpensive and quick to build.

■ **Continual reordering costs:** Because wood is an organic material, it easily splinters and can quickly warp or weaken. These characteristics can significantly increase reordering costs.

### PLASTIC PALLET: STAY FLEXIBLE

Eight million plastic pallets are manufactured in the United States annually, comprising nearly two percent of all new pallet production. They are often used in the automotive, beverage, and pharmaceutical industries. Here are some advantages of plastic pallets:

■ **Absence of contamination:** Unlike wood, plastic is not easily contaminated by toxic liquids or other chemicals. Because plastic pallets can be cleaned and disinfected, they save shippers time and costs associated with reordering additional pallets.

■ **Weather resistant:** Plastic pallets do not absorb moisture, which often leads to mold growth and increases the pallet's total weight.

### STEEL PALLET: TOUGH STUFF

Steel pallets comprise less than one percent of the current pallets in distribution, and are commonly found in the

automotive, food, chemical, and pharmaceutical industries. When considering steel pallets, factor in the following attributes:

■ **Lower insurance costs:** Because steel is not flammable, and its wood and plastic counterparts can fuel existing fires, using steel pallets can reduce insurance costs.

■ **Lower replacement costs:** Steel is exceptionally durable and will not break or warp under pressure. This overall durability cuts down on costs, because steel pallets need to be replaced less frequently than wood or plastic pallets.

■ **Lower costs associated with large-scale problems:** Like plastic, steel pallets require no treatments for bugs or other infestations. Additionally, some chemicals that can burn or penetrate through plastic will not affect steel pallets.

### PICKING THE BEST SOLUTION

Pallets are a large part of today's materials handling operations, so choosing the proper pallet design and material is crucial to any distribution system. Once logistics managers begin strategically choosing pallet types on a case-by-case basis, they'll benefit from reduced expenses and optimized workflow. ■



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# GREEN LANDSCAPE

**SUSTAINABILITY  
IN THE SUPPLY CHAIN**

by Pradeep Chaudhary

## Software Tools Optimize Green Logistics

**B**y now most third-party logistics (3PL) service providers, big and small, have jumped on the sustainability bandwagon. They're reducing ship and truck speeds, designing and restructuring warehouses to cut power consumption, implementing bio-fuels, packing products with reusable and environmentally friendly packaging, and consolidating freight for full truckload runs.

But they could be doing more. Maybe that "full" truckload is actually only 90 percent full. Perhaps there was a better, more efficient way of loading the cases inside the trailer, an arrangement that could have squeezed in more product. Over a few shipments, perhaps one full truckload of deliveries could have been avoided by optimizing the loading plan—and skipping that one truckload delivery would have saved the shipper money, conserved fuel, and reduced emissions.

Today's logistics service providers have access to a wide variety of optimization tools to help improve efficiency,

reduce costs, and go green. Ask your service provider if it is using the following strategies:

■ **Load planning optimization.** Many software tools offer load building simulation capabilities. These applications incorporate a variety of business rules and constraints—such as trailer cube, unit load sizes, package sizes, stackability, and weight—along with complex algorithms to arrive at the optimal sequence and quantity of cases or pallets to be loaded inside the trailer.

Optimized loads not only reduce costs through maximum capacity utilization, but also indirectly contribute to reducing emissions by cutting the overall number of deliveries.

■ **Network optimization.** Changing demand patterns, increasing product mixes, fluctuating fuel prices, and other factors keep a 3PL's network in a constant state of flux. To adapt to these changes and maintain the greenest, most efficient network, your service provider should use network planning and optimization tools to evaluate factors

such as the number, size, and locations of its distribution centers; possible routes through which it can execute service at optimum cost and time; and the number of assets—such as trucks, trailers, and materials handling equipment—it requires to serve your needs.

■ **Empty container repositioning.** Repositioning empty shipping containers near sources of supply represents a significant cost—not to mention a considerable waste of fuel. The problem is compounded when there are multiple demand and supply sources. Empty container repositioning solutions consider constraints such as volume, transit time, port congestion, and vessel schedules to develop strategies to minimize repositioning.

### SERVICE VALUE

Optimization tools can help increase efficiency, reduce costs, and achieve green goals. Talk to your 3PL to find out if it uses these resources to provide you the best—and greenest—value from its service. ■



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# *UNCOMMON GROWTH*

*Ground carriers redefine expedited services to meet new delivery and security demands in a down economy.*



# ON ROAD

*by Amy Roach Partridge*

GETTING THE RIGHT PRODUCT TO THE RIGHT CUSTOMER AT THE RIGHT TIME IS EVERY SHIPPER'S CORNERSTONE GOAL, AND IT IS NEVER EASY TO DO.

When that "right time" component means a time frame of 24 hours or less, it is even harder to pull off. Welcome to the world of expedited ground shipping, where business always operates at breakneck speed and every shipment is high priority.

Expedited ground shippers are a varied lot—from clothing companies trying to get merchandise on store shelves before the next trend hits, to auto parts suppliers sending components for a just-in-time production line, to medical equipment manufacturers shipping high-value machines—and they all depend on expedited ground carriers to deliver effectively under extreme time constraints.

To meet these needs, expedited ground carriers must be prepared to deliver a mix of cargo types and load sizes for an array of customers in myriad locations—all in a flash. "Expedited is a premium service focused on fast, efficient delivery of either time-sensitive, service-critical, or high-value freight," explains Max Pietsch, general manager for Schneider Expedited, Green Bay, Wisc.

"Expedited shipping is an intense business," adds Mike Gannon, president of CRST Van Expedited, the Cedar Rapids, Iowa-based expedited division of CRST International. "On-time performance is measured at a much higher rate in expedited than in standard ground shipping."

And if expedited is intense business in flush economic times, it has become even more so since the so-called Great Recession began. The drop in consumer spending has caused a ripple effect of falling shipment volumes throughout the transportation market, and expedited has not been spared. With lowered demand for products overall, shippers are producing fewer goods and sending fewer loads, leaving carriers to search for ways to fill their trucks.

"The expedited market has been hit like all other trucking markets, and carriers had to work extremely hard to keep trucks loaded this year," says Pietsch.

This can be good news for shippers, however. A competitive environment means the shipper is king. In many cases, they can negotiate fiercely with carriers on rates and services.

"Shippers are pushing carriers to reduce costs and be more competitive because they know there are more trucks than available freight," Pietsch says. "Because of this imbalance, carriers must be competitive on service."

By expanding the definition of expedited to include time-definite services with slightly longer delivery times, carriers are helping shippers strike a balance between cost and service.

"Shippers are looking for a broader range of expedited solutions and services," notes Andrew Clarke, CEO of Panther Expedited Services, an expedited carrier based in Seville, Ohio. "With a two-day time-definite service, for example, a shipment may arrive 12 hours later, but at significant savings."

By adjusting their supply chains to allow for those extra transport hours while still meeting their own customers' demands, shippers can reduce transportation costs without sacrificing service. Examining alternatives to an overnight move is always a good cost-reduction strategy.

"If we look carefully at a shipment's destination, weight, and dimensions, we can often find alternatives: Can the shipment arrive tomorrow by 5 p.m. instead of by noon? How about second day by noon?" Clarke says. "Shippers can save up to 20 percent by switching from one-day to two-day delivery."

### CUTTING INVENTORY COSTS

In addition, shippers can use expedited freight as a strategy for reducing overall inventory costs. By moving goods quickly and dependably, manufacturers, retailers, and distributors can keep fewer goods on hand, thereby reducing the cost of holding inventory.

An aerospace manufacturer that embraces the lean inventory philosophy can, for instance, have parts suppliers ship commodities directly to its plant or production line via expedited rather than keeping those parts on the balance sheet as inventory.



**When the Cash for Clunkers program ran its course, automakers turned to expedited deliveries to replenish depleted inventories.**

"Shippers using expedited are weighing the benefits of paying more to move product quickly against pulling some costs out of the complete supply chain and reducing inventory," Pietsch says.

Ironically, some shippers have come to view expedited ground delivery itself as a cost-saving measure, selecting it over air freight as a way to cope with pared-down transportation budgets. The previously soaring airfreight industry has plummeted since the recession began, and the International Air Transport Association predicts 2009 volume declines of 17 percent. For many shippers, the costs associated with air freight are just not sustainable,

especially when they can select more affordable options.

"If shippers can build some time into their supply chain, they can gain better value choosing expedited truck over air freight," says Schneider's Pietsch.

In addition, the cost of not using expedited shipping is sometimes one that companies cannot bear.

"While expedited can be a premium cost, there is also a large cost attached to products not being delivered where they need to be on time," Clarke says. "Think about a manufacturer who needs to ship a load of batteries to a production line to prevent the plant from going down." In this case, the expedited cost is not a luxury, but a necessity.

### SEEK TO COMPETE

Shippers going the expedited ground route also gain go-to-market flexibility that offers a competitive advantage.

In the automotive industry, for example, the success of the government's Cash for Clunkers program had many car companies juggling inventory to get the right cars to the right dealerships to meet sudden high demand. Expedited shipping helped fill that need, allowing automakers to take advantage of a time-sensitive sales opportunity. Now, in the wake of the federal program, car companies will again be turning to expedited to help replenish inventories.

"Cash for Clunkers depleted inventories, so automakers are ramping up production to replenish distribution centers and will return to expedited moves," Clarke explains.

For retailers attempting to salvage one of the worst sales years in recent history, getting products to store shelves in time for this year's holiday season is crucial. Many turn to expedited ground shipping to gain the market flexibility they depend on at this time of year.

"Retail shippers are looking for commitments and capacity," says Gannon. "They want expedited carriers to step up because they are hoping for a surge in the fourth quarter, and these lanes have to move 100 percent on-time."

Regardless of how customer friendly and rate sensitive expedited ground carriers are being right now, expedited is

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still a premium service that carries a premium price tag. As a result, some shippers are examining their overall supply chain and transportation strategies to determine ways to reduce their use of expedited shipping.

While some shippers rely on expedited shipping because their product is time- or security-sensitive and always needs to be delivered as quickly as possible, many companies fall back on expedited transportation as a stop-gap measure when something has failed elsewhere in the supply chain.



**Schneider Expedited enhanced service by keeping more than 1,000 teams on the road around the clock to deliver time-critical shipments and high-value loads.**

Emergency expedited service is certainly dependable, but this type of unplanned transportation expense adds up—and in today's economy, is often not sustainable. Shippers searching for ways to reduce freight costs should heed the "crystal ball theory," says Thomas Phelps, who runs Alloquor Consulting, a Los Angeles-based supply chain process and technology consulting firm.

The theory goes as follows: If a proverbial crystal ball could tell a shipper exactly what customers will order and when they will need those goods delivered, the shipper wouldn't have to use expedited at all. The company could keep the necessary inventory in its warehouse and use a low-cost carrier to move shipments in plenty of time.

Obviously, that crystal ball is not

available. "So companies need to ask, How do we get as close as possible to having that crystal ball? What can we do to enhance inventory management? How can we improve purchasing planning so we buy the right products and receive them on time?" Phelps says.

"Companies seeking ways to reduce expedited freight costs shouldn't necessarily start by focusing on transportation itself, but rather look at why they actually need expedited freight," he adds. "The answer is usually poor inventory management.

"Improving inventory management and purchasing management can have a big impact on reducing the need to expedite shipments," Phelps notes.

He cites the example of a sporting goods company that recently reduced expedited freight spending by implementing a material requirements planning (MRP) system, which helps ensure that materials and products are available for production, and plans manufacturing and purchasing activities as well as delivery schedules.

The sporting goods company, which uses contract manufacturers in China and sells its products to major retail stores including Walmart and Sports Authority, used the MRP system to revise inventory management practices and purchasing strategies. By doing so,

it was able to minimize dependence on expedited shipping to meet its retailers' delivery requirements. Using a materials purchasing strategy to plan sourcing and cut down on expedited shipping is especially important for companies that source products globally and deal with long lead times.

Global sourcers may also reduce expedited shipping using an enterprise resource planning system that offers an available to promise (ATP) module. Using ATP, shippers can determine if they have the ability to promise customers a specific delivery date.

"A manufacturer, for instance, can tell a customer who is placing an order for 1,000 pieces, 'We can send you 750 pieces by Tuesday and the other 250 by Friday—will that work?' Many times it will prevent the shipper from having to expedite all 1,000 pieces at a later date," Phelps explains. "System improvements can go a long way toward creating that type of customer satisfaction."

#### **TEAM PLAYERS**

Other companies get more creative in finding ways to make expedited shipping work within their budget, notes Phelps. He points to a manufacturer that recently added a team-driver component to its private fleet to enable faster deliveries for time-sensitive clients.

Having two drivers means the truck can often travel from origin to destination without making the time-consuming stops a solo driver would need to make. By using team drivers, this manufacturer was able to ship orders quickly enough from its West Coast distribution center that it no longer needed its East Coast facility.

"The expedited freight and team drivers were more expensive than regular freight, but the expense was far outweighed by the property, labor, and inventory carrying cost savings achieved from shuttering the East Coast warehouse," Phelps explains.

While a team-driver approach may be somewhat unique for shippers, it is at the core of many trucking companies' expedited offerings. Having two drivers in a truck means the trip is less impacted by the Hours of Service

requirements, which limit the number of daily hours spent driving and regulate the minimum amount of time drivers must spend resting between shifts. Utilizing a team-driver strategy is one way to achieve the on-time delivery rates—and security expectations—expedited shippers demand.

“From a security standpoint, shippers of high-value goods don’t want their product sitting with a solo driver who has to take a 10-hour break; they want to keep freight moving from pickup straight through to delivery,” explains Gannon of CRST, which uses team drivers for all its expedited shipments.

Goods do not necessarily have to be high in dollar value to create security concerns for their producers; companies may opt for expedited shipping to preserve valuable intellectual property. “Many companies worry about product falling into the hands of their competitors, and they don’t want their goods to be contaminated,” Pietsch says.

#### TECH TOOLS

While shippers may feel more at ease with team-driver solutions in place, they also expect expedited carriers to offer technology solutions that boost security. Most expedited fleets are equipped with satellites and other high-tech tools that enable carriers to track loads and communicate with drivers, ensuring that goods will be delivered safely and have not been tampered with.

Many carriers offer shippers themselves the ability to track and trace loads for additional peace of mind. And, trucks used for expedited routes often contain door sensors and panic buttons in case of a security threat.

“Security requirements are completely shipper-driven,” notes Gannon. “Some shippers require their expedited carriers to go above and beyond the norm.”

One way to go above and beyond is with geofencing, a technique for monitoring and restricting vehicle movement to a particular area. Many expeditors rely on geofencing for sensitive shipments because it allows them to set a specific route that a truck must adhere to.

“We can tell if a truck veers off the set route, which could mean that something has gone wrong,” says Panther’s Clarke. “Because of the sensitive nature of many expedited loads, shippers sometimes require geofencing for the ultimate in protection.”

After all, being the ultimate in protection—both against security threats and for ensuring on-time delivery—is what expedited ground is all about. Even with the collapse of the consumer market that drives the economy and shapes the supply chain, shippers still opt to use expedited ground for their time- and/or security-sensitive cargo.

And, with a little extra work, as well as cooperation from carriers, shippers are finding ways to use expedited transportation without boosting shipping costs or sinking the bottom line. ■

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# RELIEVING THE HOLIDAY HANGOVER

Retail madness doesn't stop at year's end – it just reverses direction. A medicine chest of reverse logistics remedies helps alleviate retailers' inventory headaches.





by Merrill Douglas

For some holiday revelers, the period between Christmas and New Year's morning is a time for eating too much, hopping from party to party, visiting seldom-seen relatives, and overspending on gifts. By January 2, though, most celebrators are ready to get back to business as usual.

That is, unless they're retailers or retail vendors. In the weeks after the holidays, the companies that sell all those gifts we lugged home from the mall will be nursing a collective holiday hangover that's likely to last until Valentine's Day.

Just as the gift-buying frenzy dies down in late December, customers start lining up at service desks and shipping counters to return or exchange the gifts they don't want or can't use. Those lines signal the high season for reverse logistics.

"Through the holidays, outbound shipping volume increases," says Doug Pasquale, senior vice president, supply chain solutions for Brightpoint, an Indianapolis-based third-party logistics (3PL) provider serving the wireless industry. "Post-holiday, inbound volumes spike with returns."

That spike doesn't mean that retailers see merchandise coming back at a higher rate at the end of the holiday season. "As a percentage of sales, returns volume remains low," says Michael Janecek, warehousing and logistics manager at The Land of Nod, which sells children's products through its Web site, catalog, and stores in the Chicago area and Seattle.

But even as the percentage holds steady, higher sales volume late in the year results in a corresponding jump in returns. "Our biggest challenge is keeping up with the sheer volume," Janecek says.

Liberal return policies aimed at keeping customers happy ensure that retailers, vendors, and their service providers will process a steady flow of holiday gifts returned in all conditions—from the Barbie doll never removed from her box to the remote control plane that won't fly. Whatever shape it's in, each item requires attention and an action plan.

### SAVING THE SALE

At Musician's Friend, a direct retailer of musical instruments, equipment, and accessories, about 80 percent of products come back in perfect condition, and more than half come back due to "customer remorse," says Galen Erickson, vice president of fulfillment, who runs the company's warehouse in Kansas City, Mo. "For example, the husband buys a \$1,200 guitar, the wife balks, and he sends the guitar back."

Another three percent of customers who call for return authorization claim the warehouse shipped the wrong item. But many of these "errors" are further instances of cold feet, Erickson says.

"An audit of those claims shows 65 percent of the items supposedly picked wrong were actually right," he adds. "But we don't give customers a hard time. We want the returns transaction to be guilt-free for them."

The first strategy for managing the reverse logistics chain at Musician's Friend is to keep products from entering



**Customers dissatisfied with an item purchased between October and Christmas Eve can return it to children's product retailer The Land of Nod by Jan. 31 for a refund of the product's value.**

and resell many products that might be returned after the holidays," Janecek says.

A product in less-than-perfect condition isn't resold as new, of course. "If there's a safety issue or a true defect, we return the product to the vendor, or dispose of it," Janecek says. And if an item comes back with just a dent in its carton, it is sent to the Land of Nod outlet store in Naperville, Ill.

Some suppliers make specific agreements with retailers to keep undamaged returns in stores. "We work with our

dealers to sell returned items as open-box units at a discount price, so we don't have to bring them back to our distribution warehouse," says Rubina Farooq, director of return logistics at LG Electronics USA, a global manufacturer of electronics products. "We don't want the unit to go through the whole reverse supply chain because we risk more damage and incur more cost."

Although sales of electronics climb during the holiday season, in the past, LG hasn't seen large spikes in post-holiday returns. "Most retailers sell returns through other channels, such as open box sales or outlet stores," Farooq says.

This year could bring a change, though, as LG starts selling products

it at all. Call center representatives try to persuade customers to keep their purchases, sometimes by offering a discount, or they encourage customers to make an exchange. A resident expert might save the sale by explaining how to use complex equipment the customer couldn't figure out.

Less-specialized retailers, however, usually take products back with little discussion. Some stores and e-commerce businesses put undamaged returns right back into inventory.

Holiday-specific items sold at The Land of Nod, such as Christmas tree ornaments or Hanukkah playsets, become much less compelling once the season is over. "But we go forward

dealers to sell returned items as open-box units at a discount price, so we don't have to bring them back to our distribution warehouse," says Rubina Farooq, director of return logistics at LG Electronics USA, a global manufacturer of electronics products. "We don't want the unit to go through the whole reverse supply chain because we risk more damage and incur more cost."

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This year could bring a change, though, as LG starts selling products



**LG Electronics urges retailers to sell returned PDAs and other products at discount prices to keep them out of the reverse supply chain.**



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While some products go back on sale through the channels that originally sold them, many don't, even when they are returned in pristine shape. Instead, retailers ship those items to a returns center operated by the vendor or a 3PL.

"The national retailers are good at negotiating return policies," Pasquale says. "They don't want liability and they don't want to absorb any additional labor. They want the supplier to deal with it."

At the returns center, products undergo triage. Items in perfect condition might go into inventory for sale through an outlet store or e-commerce site. Those items sometimes need to be re-kitted or repackaged. Imperfect or slightly used items are repaired, then sold as refurbished products.

Wireless phones provide a good example of products that move straight from the returns counter into the reverse logistics chain. If a consumer returns a handset to a store in perfect condition, it will likely be sold through a different channel, such as the wireless carrier's Web site. Handsets that require some repair might be used as replacements under a warranty or insurance program, or sold on the Web as refurbished items.

#### GIVING CREDIT

National retailers accumulate items in their own return centers before shipping them in bulk to the vendor or its service provider, says Blake Vaughn, director of reverse logistics at Brightpoint. As Brightpoint processes those handsets, it transmits data on their status to the wireless carrier.

"It's important that the products get processed accurately and quickly, because a national retailer is waiting for a credit, which typically totals hundreds of thousands of dollars," says Vaughn.

Like Brightpoint and its clients, Musician's Friend puts a lot of effort into recovering the value of items that customers return in less-than-perfect condition. Employees in the repair department rate products on a scale of 1 (best condition) to 5 (badly damaged), then determine whether



it's worth investing resources to bring the condition up a notch. Musician's Friend sells refurbished instruments on eBay and on its own Web site, while a badly damaged product might be sold in the clearance store attached to the

**Third-party provider Brightpoint creates and deploys reverse logistics systems to receive, manage, and ship inventory.**

company's distribution center.

"Somebody will buy it for the parts, or we'll use the parts ourselves," Erickson says. "We don't throw anything away."

Apart from merchandise that ends up in retailers' own secondary channels, many items that consumers return are sold in bulk to liquidators and end up in closeout stores, online auctions, or flea markets.

"The secondary product market totals more than \$100 billion a year," notes Stephen Fraser, chief executive officer for 3PL GENCO Reverse Logistics Businesses, Pittsburgh, Pa.

The reverse logistics chain in the year's first quarter works much the way it does the rest of the year; there's just more product flowing. And holiday returns make up only part of the picture.

## WHAT'S IN THE CARDS?

**A**lthough consumers are expected to spend cautiously this holiday season, one product that's likely to see increased sales is the gift card.

Whether plastic or electronic, gift cards have become an increasingly popular way to say "I care" at holiday time. So even as we're tossing out the used gift wrap and ribbons, hordes of recipients will be gearing up for a second round of shopping. Some will barely give their cards a chance to nestle into their wallets. Others will contemplate their purchases for months before ringing them up.

For people who manage the supply chain, the influx of gift cards at holiday time doesn't pose any special challenges, say retailers, vendors, and service providers.

"It's not such a huge percentage of sales that we're waiting for the other shoe to drop when the gift cards are suddenly redeemed," says Michael Janecek, warehousing and logistics manager at The Land of Nod, a purveyor of products for children. Like most retailers and direct marketers, The Land of Nod sees more consumers pay for purchases with gift cards in January. "But it tends not to affect our inventory position significantly," he adds.

Gift cards may, however, extend the peak retail season beyond the end of December. At Musician's Friend, which sells musical instruments and equipment through its Web site and catalog, electronic gift cards help make January the company's second-busiest sales month. The company's post-holiday catalog hits the mail between Christmas and New Year's, and customers who receive cards as gifts respond with gusto. "We have a very high redemption rate on our gift cards," says Galen Erickson, vice president of fulfillment.

Although he doesn't yet have figures to prove his hunch, Justin Holtzinger, director of reverse logistics at wireless carrier Virgin Mobile, theorizes that the growth in gift cards helps to keep some product out of the reverse logistics stream, relieving post-holiday headaches.

Consumers who receive a wireless phone as a gift but really want a higher-end unit might return the phone and add extra cash to get the product they really want. But people who receive a gift card can buy the product they want in the first place. "As customers are able to choose the exact products they want, we'll see fewer products coming back to us," Holtzinger says.



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The first quarter also is peak season for clearing out merchandise that hasn't sold or that the retailer no longer wants to carry in the store.

"Most retailers close their books at the end of January for the calendar year," Fraser says. So while they're handling holiday returns, they're also disposing of excess inventory that they don't want on their books in the new year.

our business within a few months," Holtzinger says. "That means we also handle a good percentage of returns within a few months."

Repair partners are understandably reluctant to add resources to handle peak return seasons, only to see them sit idle the rest of the year.

"We encourage our partners to add resources and order additional parts in

GENCO Marketplace, works all year to develop new markets for returned or excess inventory. So even though products flow into the secondary market early in the year, GENCO's customers find demand for their liquidated merchandise is similar to other periods.

One area where GENCO doesn't need to prepare for special post-holiday challenges is transportation. "True, there's



**GENCO Supply Chain Solutions operates return centers totaling more than four million square feet throughout North America. Many of these centers include reverse fulfillment capabilities that reintroduce returned items to sales or manufacturing channels.**

"The combination of holiday returns and inventory management decisions related to year-end financial planning floods the reverse channel with product in the first 45 to 60 days of the year," he notes.

While it's important to implement the reverse logistics process correctly throughout the year, the high-volume period after the holidays poses special challenges.

"One of our biggest challenges is related to when we will receive returns from the retailer," says Justin Holtzinger, director of reverse logistics at Virgin Mobile USA, a wireless products and services company that uses Brightpoint to handle its logistics and a portion of its repairs.

The fact that national retailers accumulate returns before sending them back complicates this puzzle. "It's hard to forecast how many batches of returns will come through," Holtzinger adds.

Virgin Mobile and its partners try to mitigate the effects of fluctuating volume by maintaining the necessary levels of staff and repair parts. That's especially hard to do after the holidays.

"We transact a high percentage of

anticipation of the expected volume of returns," Holtzinger says. The goal is to process returned handsets as quickly as possible, so Virgin Mobile won't need to order a large volume of new merchandise from original equipment manufacturers.

Still, Holtzinger understands that his service providers are his partners, and success requires collaboration. So, during the post-holiday spike, Virgin Mobile loosens its expectations for turnaround time (TAT) on repairs.

The usual TAT is five to seven days. But meeting that standard in January would force repair partners to staff up more than is practical. "During the post-holiday season, I'm comfortable with a 10- to 15-day TAT, as long as it is reduced during the next 30 to 60 days," Holtzinger says.

Preparations to handle returns and liquidated inventory after the holidays start well before merchandise starts flooding back. "GENCO begins staffing, preparing, and training in the fourth quarter for the extra load that the reverse supply chain will handle in the first quarter," Fraser says.

Also, GENCO's liquidation business,

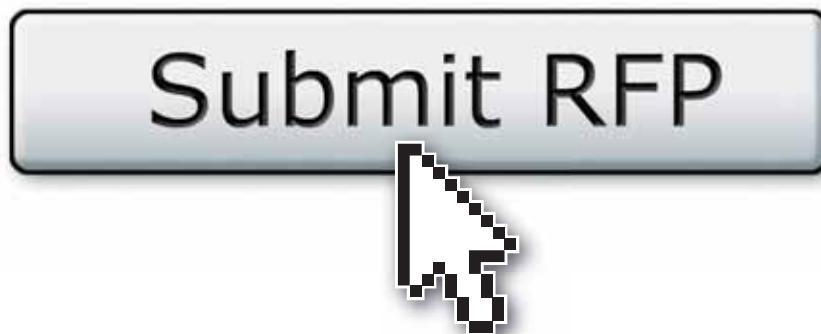
more returned and liquidated merchandise to ship at that time," Fraser says. "But there's also less new merchandise on the road. Because it's traditionally a slower time of year, trucking capacity issues don't arise right after the holidays."

Like the service providers, Musician's Friend adds staff to handle post-holiday returns. Starting on Thanksgiving and continuing into the first quarter, Erickson's industrial engineering and human resources employees are tapped to become operations staff.

Also to stave off post-holiday headaches, Musicians' Friend takes extra care to avoid picking mistakes during the holiday shopping rush. The warehouse does a quality check on all items it ships between Thanksgiving and Christmas, a crucial step at a time when many temporary workers join the staff.

As with any sort of hangover, there's no shortage of formulas for relieving the pain of post-holiday reverse logistics. For retailers and their vendors, judicious staffing, flexibility, collaboration with reliable partners, and attention to detail can ease the transition from the winter holidays into the new year. ■

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- DESCRIBE YOUR WAREHOUSING CHALLENGE:** [text area]
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**The next three installments appear on the following pages:**

- 44** How to Outsource Wind Logistics
- 46** How to Gain Reverse Logistics Efficiency
- 48** How to Create a Lean Warehouse Culture

You'll also find these articles on our Web site: [inboundlogistics.com/how](http://inboundlogistics.com/how) and in digital format: [inboundlogistics.com/digital](http://inboundlogistics.com/digital)

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# How to Outsource Wind Logistics

**A**S DEMAND FOR RENEWABLE ENERGY SOURCES GROWS AND GREEN BEST PRACTICES TAKE ROOT, the wind energy industry keeps blowing across the United States. Regardless of whether wind turbine components are sourced globally or domestically, the demands placed on shippers and transportation and logistics service providers are extreme.

Planning, organizing, and executing wind turbine moves requires special care, attention to detail, and oversight. Wind logistics is project logistics to the core. Unwieldy cargo destined to remote and difficult-to-access locations demands partnership with a touch of grit.



## AS THE WIND BLOWS...

When looking to engineer a wind logistics move – or any project logistics task – here are six considerations to keep in mind.

**EXPERTISE.** Moving wind turbine components requires project logistics pedigree. Shippers need to ensure their logistics and transportation service providers have experience marshalling and transporting over-dimensional and specialized cargo. Familiarity and knowledge should include qualified personnel to manage wind logistics projects – in the field and in an operations center – as well as vetted references for crane operators, dray providers, motor freight carriers, and railroads.

**EQUIPMENT.** Shippers require specialized equipment to move over-sized turbine components via road or track – from removable gooseneck trailers for trucks to flatcars for rail. When developing project timelines and communicating with loading and unloading facilities, consideration should be given to equipment availability in specific geographic locations. Additionally, consignees must account for sufficient lead times to provide equipment at the origin location, to inspect and approve equipment upon arrival, to modify equipment as necessary, and to verify equipment ordered with loading/engineering diagrams.

**ROUTING/PLANNING.** Transporting wind components requires extensive planning. In general, technical drawings of how components are loaded, secured, and conveyed, and information about origin/destination points, must be submitted to permitting agencies to obtain clearance. Routes are reviewed, for example, to identify bridges that may be too narrow, overpasses too low, bridges and roadways with weight limits, and “curvy” roads that cannot safely accommodate over-dimensional loads. The planned route may include substantial out-of-route miles, which will add time and cost to the project.

**DOCUMENTATION/PERMITTING.** Most truck permitting is state-issued, which creates challenges as states interpret and apply routing and safety guidelines differently. From a Federal perspective, each carrier and service provider must have the necessary permit and operating authority from the Department of Transportation. Local regulations also come into play as they relate to noise and nuisance ordinances, lane restrictions or closures, and the environmental impact of dunnage removal at an unloading location. By and large, motor freight requires much more permitting than rail.

**TRANSPORTATION.** Wind logistics projects typically use multiple modes – truck, rail, and barge – to take advantage of cost economies and to reach remote locations and facilities. Sometimes wind component production facilities store components in a “lay down” area (a secured yard or adjacent field) that is not proximate to a rail spur. Cranes may be required to lift components onto flatbed trailers for transport to destination, or transport to a rail loading location. These components generally cannot be warehoused in the traditional sense.

**COMMUNICATION.** Because of the unique nature of wind components and obvious complexities, communication among all project participants is paramount. A single point of contact (POC) streamlines clearance documentation and routing instructions. A POC can also interface with various parties: origin and destination dray providers, crane operators, stevedores, rail and motor freight carriers, load and ride engineers, permitting offices, and city and local departments. This is also a consideration when authorizing work for subcontractors, then consolidating invoices. The ability to retrieve load status information with one call to the POC is a definite advantage.



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# How to Gain Reverse Logistics Efficiency

**F**ORWARD THINKING COMPANIES INCREASINGLY NEED TO CONSIDER REVERSE. With so much attention, time, and capital spent on exploring ways to move the enterprise in new directions, what's left behind is often overlooked and under-controlled.

Reverse logistics covers a wide array of services – from inspection, repair, and remanufacturing to consumer returns and aftermarket recycling. It can reduce waste and ancillary costs, drive sustainable best practices, or generate new revenue streams. It may include using inbound routing guides and core carrier partners to manage returns or outsourcing product lifecycle management to a 3PL.



Reverse logistics becomes even more important when the bottom line drops, budgets cinch, and sales grow sluggish—when economy and customer service become paramount. Manufacturers are challenged to maintain high cost structures without risking lost sales due to poor customer service. Retailers, too, must focus on outward-looking forecasts to

match marketing and sales efforts with demand. Overstock and returns are often unavoidable and they account for considerable expense.

Some companies may rewire their internal infrastructure and work with logistics partners to manage the returns process; others completely outsource reverse logistics to reduce fixed costs.



## REVERSE ENGINEERING

Here are three examples of how companies can rethink reverse logistics to gain greater supply chain efficiency and economy.

**CHALLENGE #1:** Following a series of acquisitions, a retailer is managing reverse logistics regionally. Recognizing that a fragmented approach is creating redundancies, inefficiencies, and cost bleeds, it decides to adopt a centralized returns strategy.

**SOLUTION:** The company uses a demand-supply planning model to substantially reduce inventory by postponing unneeded repairs and focusing repair activity on meeting projected requirements for specific units. Additionally, integrating returns processing and repair operations reduces the return/repair cycle. Leveraging these efficiencies, the company increases control and centralizes returns processing; enables visibility to all inventory throughout the return/repair cycle; and purges unnecessary investment in buildings and systems to manage reverse logistics.

**CHALLENGE #2:** An e-commerce company expands by selling into brick-and-mortar retail outlets. As its logistics requirements grow, it struggles to efficiently manage warehouse space and labor. Managing fulfillment and returns poses an additional challenge.

**SOLUTION:** The company sells its warehouse and materials handling equipment, and outsources inbound and outbound distribution to a third-party logistics provider. It reduces its warehouse footprint and labor need by 50 percent, automating processes while improving space utilization. The company then reinvests the capital it recovers from selling the warehouse into growing its business.

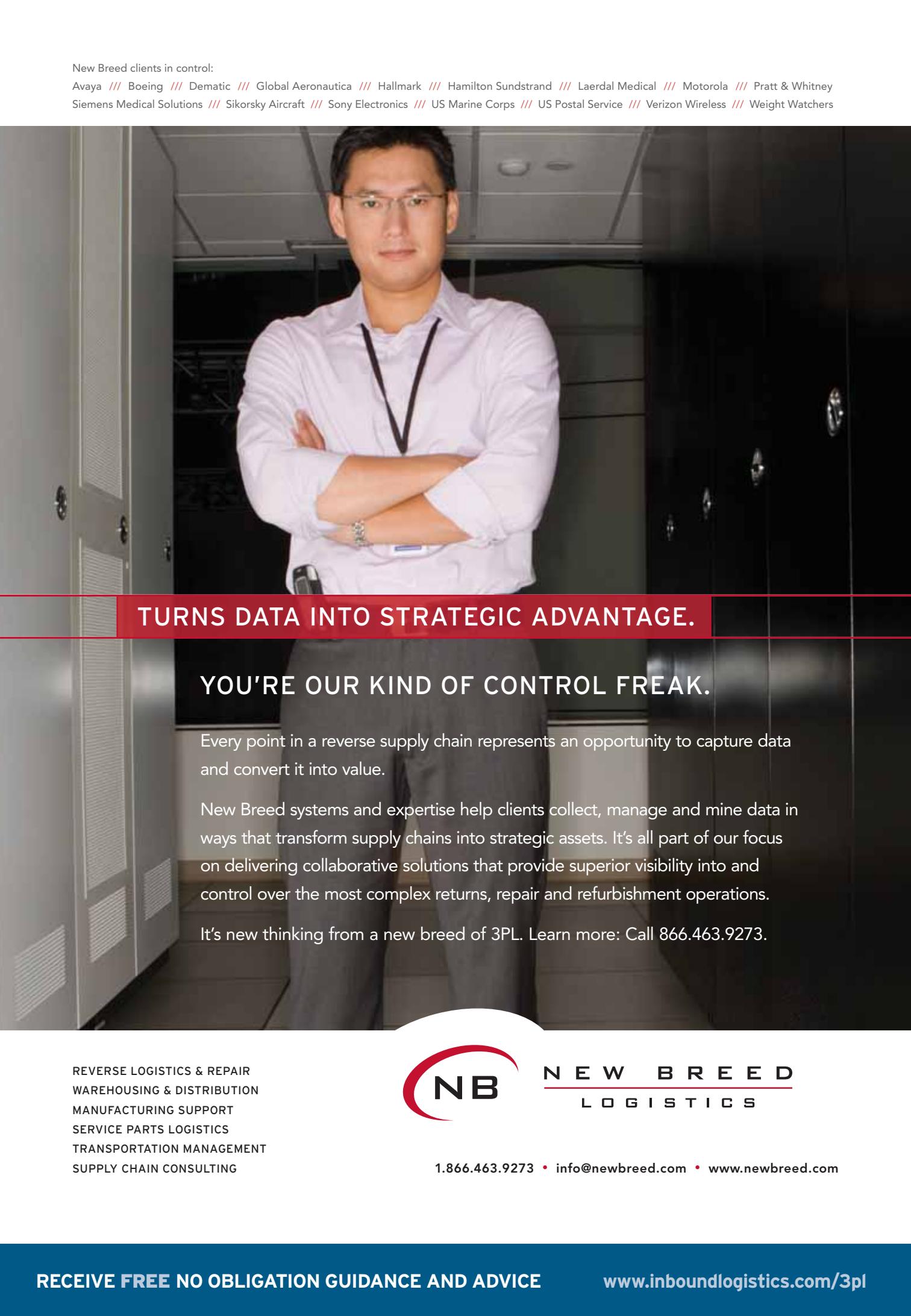
**CHALLENGE #3:** A manufacturer dealing with sensitive, high-value medical parts is hampered by a lack

of field inventory visibility. Inexact and non-automated processes for returning parts into its pipeline also create inventory management challenges. Delivering critical service parts to, and managing returns from, more than 1,000 field service technicians is rife with inefficiency.

**SOLUTION:** The company opts to work with a logistics service provider to manage a national network that includes 20 parts depots and a central distribution hub. Together with its 3PL, the manufacturer identifies key elements of the returns process that need improvement. As a result of these business process changes, the company increases visibility to parts-on-hand for field service technicians, dramatically reduces inventory costs, and centralizes all returns to a single location for better control.

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# How to Create a Lean Warehouse Culture

**T**HERE ARE THREE CORE PARTS TO ORCHESTRATING LEAN TACTICS IN A WAREHOUSE: tools, methods, and culture. Most companies have the equipment and processes to embrace lean. Culture, however, is often missing. Crafting an organizational culture that empowers lean concepts is a recurring challenge for companies, yet it yields the greatest return on investment. It doesn't happen overnight. It requires a paradigm shift. Here are six steps to making lean best practices a reality:

**1. Mutual Trust and Respect.** Lean requires candor about long-term goals and short-term progress. Employee ideas must be given serious consideration. Lean is a journey that requires every person in the organization to be trained in problem solving and to feel like a highly valued company asset.

**2. Freedom from Fear.** If employees sense they will be punished for making a mistake, the lean journey will fail. Practitioners need to take risks and learn from mistakes. The goal of lean logistics is to challenge existing processes and look for ways to reduce waste. Lean is not about eliminating jobs, it's about becoming so valuable that job security actually increases.

**3. Communication.** Senior executives and operational managers need to communicate their lean vision and a reason for change. They need to address why employees should be doing things differently than in the past. Many companies fail with lean because success isn't immediate. As the journey begins, institutional problems become visible. Apprehensions and expectations must be communicated as part of an ongoing dialog. Solving these challenges can be very rewarding.

**4. Measure What's Important.** Many companies use various metrics to evaluate their lean progression. But the most important benchmark is employee morale. If employees are excited and engaged, enjoy problem solving and eliminating waste, other metrics will reflect the true reality.

**5. Celebrating Success.** Along the lean journey, every accomplishment, however small, should be recognized and celebrated. Small wins build over time and show progress. Acknowledging and rewarding performance goes a long way toward building a world class championship team.

**6. Leaders as Teachers.** Managers who tutor staff in lean best practices lead by example. It's important to be visible and to take a proactive role in the learning curve so that employees recognize corporate commitment.



## LEAN IN PRINCIPLE

Lean and just-in-time (JIT) are sometimes confused as being one in the same. People involvement, by comparison, is an oft-forgotten pillar of lean. Both are important foundations for the following five principles that drive lean process improvement.

- **PEOPLE INVOLVEMENT:** People at all levels of the organization must feel like they are important members of the company. They are well trained and feel empowered to make decisions about how their job is performed and to be held accountable for decisions.
- **CONTINUOUS IMPROVEMENT:** Every aspect of the business is constantly challenged to get better. What was considered good yesterday needs to be improved to be acceptable for today.
- **SHORT LEAD TIME:** Reducing the time it takes to complete a task is a strong competitive advantage in today's environment. Look for ways to eliminate non-value added activity and waste from every step in the process.
- **BUILT-IN QUALITY:** Do it right the first time. Build quality control into your work processes to eliminate the high cost of rework and the need for downstream quality inspections.
- **STANDARDIZATION:** Document your work processes based on best practices. Use standard operating procedures to help train new employees and use standardized work as a baseline for continuous improvement activities.

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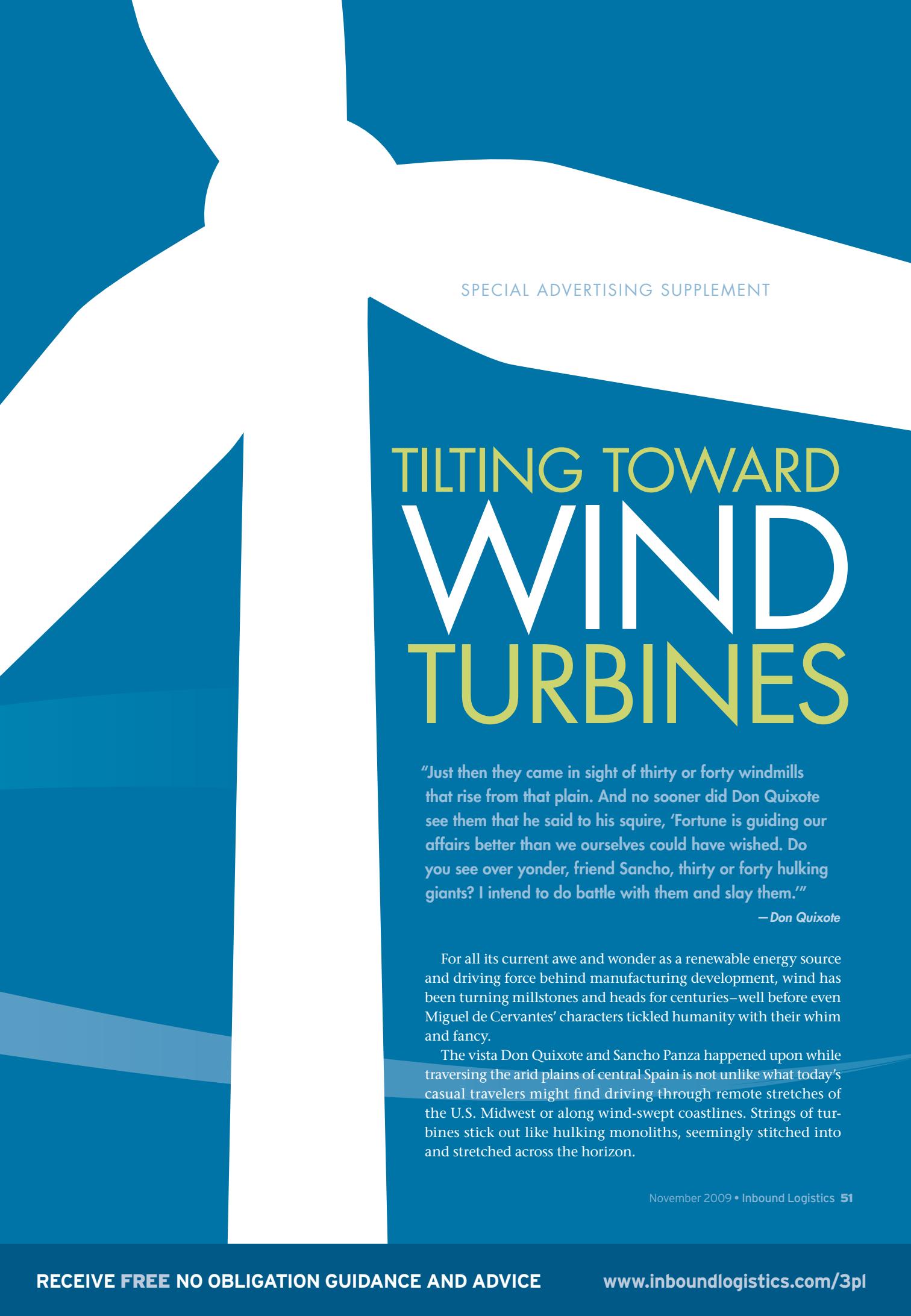
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# TILTING TOWARD WIND TURBINES

*"Just then they came in sight of thirty or forty windmills that rise from that plain. And no sooner did Don Quixote see them that he said to his squire, 'Fortune is guiding our affairs better than we ourselves could have wished. Do you see over yonder, friend Sancho, thirty or forty hulking giants? I intend to do battle with them and slay them.'"*

*— Don Quixote*

For all its current awe and wonder as a renewable energy source and driving force behind manufacturing development, wind has been turning millstones and heads for centuries—well before even Miguel de Cervantes' characters tickled humanity with their whim and fancy.

The vista Don Quixote and Sancho Panza happened upon while traversing the arid plains of central Spain is not unlike what today's casual travelers might find driving through remote stretches of the U.S. Midwest or along wind-swept coastlines. Strings of turbines stick out like hulking monoliths, seemingly stitched into and stretched across the horizon.

November 2009 • Inbound Logistics 51



## TILTING TOWARD WIND TURBINES

The wind energy supply chain is no less awe-inspiring. It's global, it's green, it's complex—and it's capturing the attention and imagination of government, economic development, manufacturing, and transportation and logistics service providers alike.

### WINDS OF CHANGE

"Wind doesn't blow in the easiest places to get to," says Dan Bingeman, assistant vice president of CN Specialized Services (CNSS).

As a logistics arm of CN WorldWide and Canadian National Railway, CNSS is well-rehearsed in covering hard-to-reach areas. It manages over-dimensional rail moves across a network that serves the main wind farm regions of Canada and the U.S. Midwest, as well as multiple ports that import wind turbine components.

Given the unwieldy and oversized nature of many wind shipments, the railroad is a likely vessel for transporting this type of cargo to and from ports and between U.S. manufacturing and installation locations.

"Customers are starting to look at siting facilities that are served by the railroad," says Bingeman. "This way, they can pull inbound supply of raw materials and push outbound finished product more efficiently."

More telling from a macro perspective, global wind turbine companies such as Vestas, GE Energy, Siemens, and Nordex are looking to site manufacturing facilities in the United States to achieve the same global objective.

More than 85,000 people are employed in the wind industry, up from 50,000 in 2007, according to 2008 data from the American Wind Energy Association (AWEA). This meteoric growth has accelerated job creation in manufacturing, where the share of domestically produced wind turbine



**Canadian National and its logistics arm, CN Specialized Services, are leveraging their shared resources to help shippers move over-dimensional wind cargo via rail.**

components has grown from less than 30 percent in 2005 to nearly 50 percent in 2008.

The shift from global sourcing to domestic manufacturing, which essentially shortens the supply chain, mirrors a similar trend within the U.S. loop. Shippers and consignees are exploring new ways to reduce the length of haul and, where possible, exploit intermodal options to take over-dimensional shipments off the road.

"It makes sense for shippers to move very large, long, and wide components using multi-modal transportation. We're challenged with tying these modes together—water to and from the port, rail to staging areas, then truck to customer," says Bingeman.

### BARGE IN TRANSIT

The railroad isn't alone in its quest for more wind business. Manufacturers, suppliers, and customers are closely

following the wake of wind-tugged strings along coastal waterways into the U.S. heartland.

The Mississippi River System, which empties into the Gulf of Mexico at New Orleans, flows through the heart of the Midwest, coursing east and west via the Ohio, Illinois, and Arkansas rivers, among others. Lay this riverine schematic over a map of the primary U.S. wind corridor—which stretches from Texas north to the Dakotas and Alberta, Canada—and it's a near-perfect match.

AEP River Operations, a Chesterfield, Mo.-headquartered barge company, has seen increasing interest from wind industry customers exploring water transport for over-dimensional cargo. AEP River Operations' pedigree is hauling dry bulk commodities such as grain, project cargo, coal, steel, and ores. Its fleet of close to 3,000 barges and 56 tow-boats has the ability to group together 40-barge tow configurations to augment line-haul capacity, making it an ideal solution for wind components.

"If size and weight are factors, companies should consider shipping via America's inland waterways system," says Terrence Moore, director of business development for AEP River Operations. "River shipping is also better for the environment and typically less expensive per ton-mile."

The barge company doesn't have to look far to find unique project cargo. From an import perspective, wind turbine parts are coming in on large ships to Gulf Coast ports such as Brownsville, Texas, and Mobile, Ala. AEP River Operations currently manages the country's largest barge-fleeting facility in Convent, La., as well as operations in Algiers, providing ship-to-barge services for the New Orleans harbor area.

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Source: <sup>1</sup>2009 Texas Transportation Institute Study "A Modal Comparison of Freight Transportation Effects on the General Public"

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Chicago, and the Great Lakes via the Illinois Waterway, Pittsburgh on the Ohio River, and as far west as Tulsa on the Arkansas Waterway," Moore adds. "We also bring together other waterway shippers who enable cargo to transit beyond the gulf to foreign destinations or West Coast ports via the Panama Canal. It's truly an intermodal partnership."

AEP River Operations also runs services laterally across the Gulf Intracoastal Waterway, as far east as Port St. Joe, Fla., and as far west as Brownsville. As with growing customer preference for facilities situated near rail spurs, the same strategy applies to inland water access where companies can leverage multiple modes to move cargo.

"Why limit yourself to two modes when the river system provides one of the most efficient and environmentally friendly ways to ship cargo?" Moore says.

Barge transport also lends itself to over-dimensional cargo for safety and security reasons. AEP River Operations works with stevedores and rigging companies to properly engineer and load barges for transporting turbine components. Using different dunnage and cribbage configurations, they distribute loads evenly over a greater square footage, then use cable and chains to anchor cargo so it doesn't shift during transit.

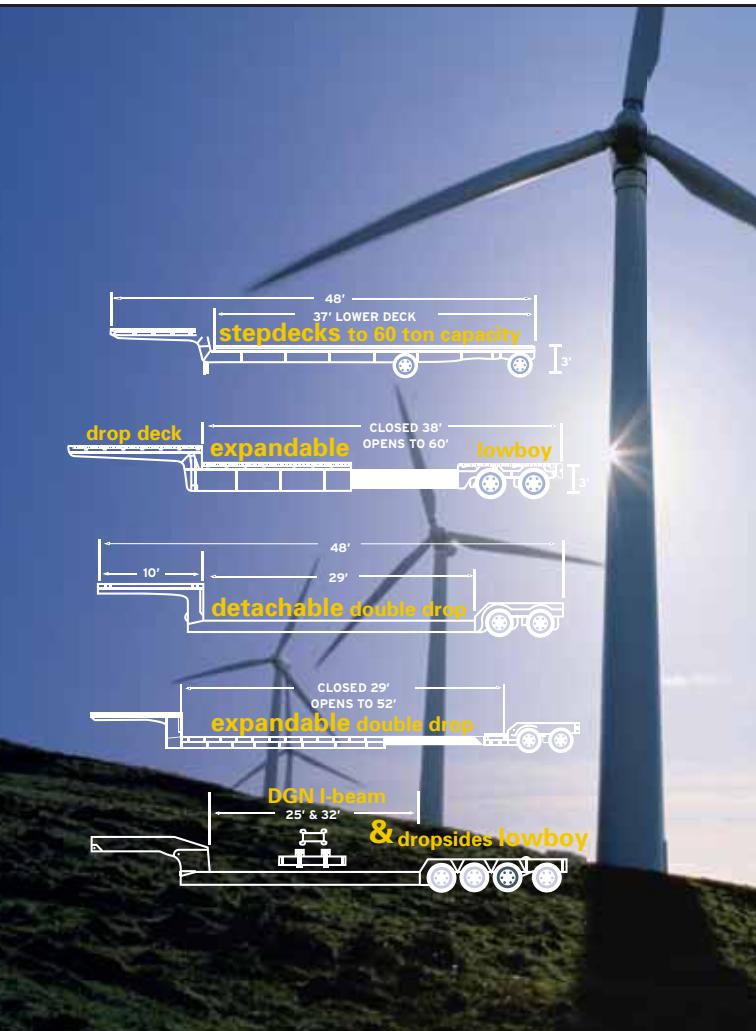
"One thing often overlooked about barge transportation is how secure and protected barge movements can be," says

Moore. "We haul sensitive and valuable product for many customers, including the U.S. military. There is 24/7 security, with a captain and crew watching over shipments. Components don't sit at a rail siding or truck stop overnight."

The challenges of moving large components over land play into the barge industry's growing value proposition. Road and bridge-strength restrictions and varying state-to-state regulations complicate planning, permitting, and execution. Equipment availability and capacity are also limiting factors.

"Towboat and barge operators have capacity," says Moore. "So we're ratcheting up efforts to diversify from primarily dry bulk into project and

*Continues on page 58*



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# GEORGIA PORTS BULLISH ON WIND

The Port of Savannah's Ocean Terminal is the Georgia Port Authority's (GPA) pride of project logistics, boasting five deep-water berths, convenient rail and truck access, and extensive heavy-lift equipment for maneuvering dimensionally large, overweight, and delicate precision equipment. With wind turbine imports and exports growing in volume, the port is making a concerted play for that business. Bill Barrs, cargo sales representative, Georgia Ports Authority, shares his perspective on how the port is tacking its sails to the wind.

### **IL: What is the state of the wind industry in the Southeast?**

**BB:** While offshore wind energy production potential is excellent, there are currently no wind industry projects under construction in the U.S. Southeast, according to the American Wind Energy Association.

The Port of Savannah, however, continues to impact U.S. wind energy development with a steady flow of critical dimensional and heavyweight parts and pieces feeding plants engaged in the construction and/or expansion of wind energy operations in the U.S. Midwest and Ohio Valley.

We've identified about one dozen large-scale wind energy opportunities in Indiana, Illinois, Michigan, Ohio, Kentucky, and Tennessee. These wind farms will combine to operate 779 new units and generate a power capacity of more than 1,360 megawatts.

### **IL: How does the GPA's pedigree in other industries translate to wind turbine components?**

**BB:** It's all about combining experience with terminal capabilities. Moving, for example, 150-foot-plus rotor blades essentially requires the same knowledge, resources, equipment, and customer service we've utilized for more than five decades to transport other dimensional and overweight shipments.

Looking strictly at customer service, I can't overemphasize the importance of the GPA's customer care team in this area. We have a Wind Energy Action Team that works hand-in-hand with the customer prior to arrival, during mid-project, and after the cargo has

cleared our gates. Our message to the customer is, we will be proactive in establishing and building on our relationship, general understandings, opportunities for improvement, and accountability. GPA's customer care philosophy has proven invaluable in growing this important segment of our business.

### **IL: Has the GPA made any specific investments in equipment, terminals, or partnerships to accommodate wind shipments?**

**BB:** Through the GPA's long-term strategic development plan, FOCUS 2020, we were well-prepared to meet the challenges of wind energy equipment. As a port historically versed in the movement of dimensionally large and overweight cargos, the necessary infrastructure, knowledge, and other required resources were already

in place. In fact, Savannah will soon add to our lifting power. A barge crane with a lift capacity of 500 short tons will arrive in 2010.

We have a proven track record to effectively open the lines of communication between the customer and the Georgia Department of Transportation should overweight permitting be involved for over-the-road transport. Georgia requires superload permits, for example, for weights exceeding 180,000 pounds.



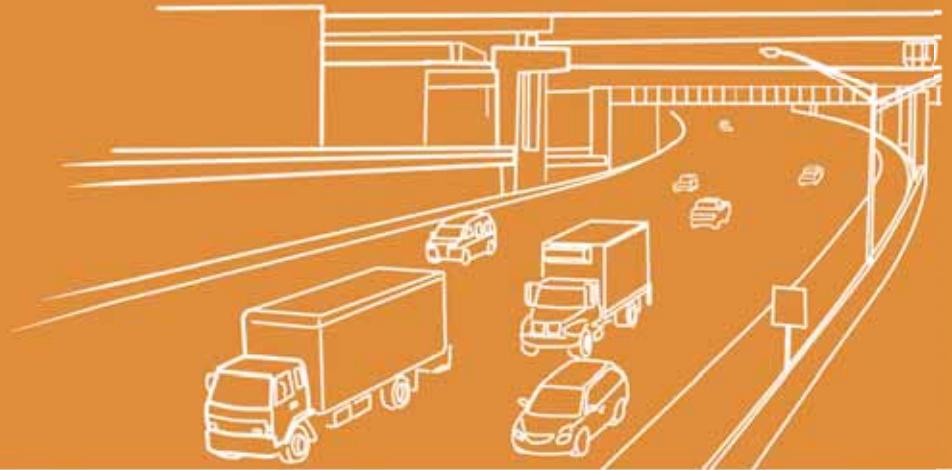
**The Georgia Ports Authority has paired its pedigree in bulk freight and project logistics and commitment to customer service to accommodate the emerging demands of the wind turbine industry.**

### **IL: As an important modal hub for bringing these types of break bulk shipments into the United States, is there an economic development tie-in? Are you seeing traction from wind industry players locating facilities in the state?**

**BB:** The state of Georgia, together with area development authorities, is actively searching for opportunities to meet the needs of, and create a favorable environment for, the energy generation and transmission industries. Recent developments include Efacec Power Transformers, which built a transformer plant in Rincon, Ga., as well as Mitsubishi Power Systems Americas, which announced in October 2009 that it would build a turbine generator plant in Savannah. Both companies will use the Port of Savannah.

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www.rgp.org



## TILTING TOWARD WIND TURBINES

*Continued from page 54*

dimensional cargo. It is very much an interstate system via water—it has capacity to grow and it's the greenest mode of transportation there is."

### GROUND SUPPORT

Intermodal transport is a necessary part of the U.S. wind industry's continued growth. But as with any aspect of domestic transportation and logistics, motor freight remains the go-to mode for managing first- and last-mile deliveries, especially in remote areas.

Heavy freight haulers such as Carlisle, Pa.-based Daily Express hit the road in stride when wind manufacturing and supporting industries began to emerge as a viable economic force in the United States.

"We've been targeting heavy-haul wind shipments for the past seven years," says Mark Eyer, Daily Express' national wind accounts manager. "The alternative energy field has really taken off. The largest single user of heavy-haul tonnage used to be the construction sector; today 40 percent of over-dimensional hauls are wind-related."

Daily Express' business has similarly shifted with changing trade patterns. Starting out 75 years ago hauling farm equipment, it transitioned first to the construction sector, and now to the wind industry. The maturation of U.S. turbine manufacturing is blowing big things the carrier's way and it has invested considerable capital in equipment to manage this growth. Over the past four years, Daily Express has acquired more than 100 new trailers to support wind shipments.

"In 2008 and 2009, wind-related cargo accounted for 40 percent of our business. Ten years ago, it was negligible," says Eyer. "The wind industry has become a year-in, year-out growth vehicle. It has flattened with the economy,



**Global wind turbine manufacturers such as Vestas, Nordex, and Siemens are siting production facilities in the United States to meet demand and shorten supply chains.**

is yet another driver for manufacturing turbines domestically. In fact, the United States is now the global leader in terms of wind energy capacity, according to the National Renewable Energy Laboratory (NREL). In 2008, the U.S. wind energy sector installed 8,358 megawatts (MW) of new capacity, bringing the country's total capacity to 25,170 MW, trumping Germany for that distinction.

It's why wind manufacturing in the United States is rampant. "Five years ago, most production took place overseas. Now we have an entirely new manufacturing industry in the United States," says Eyer.

### MOVING ACROSS MODES

The complexity of "simply" transporting wind turbine components matches the diligence necessary to plan these projects to completion. Because of the multi-modal nature of most wind cargo moves, control over the process is important.

Shippers, consignees, and transportation and logistics partners go to great lengths planning, routing, permitting,

but it will continue to expand. Long term, this sector will grow as the United States expands its wind portfolio."

Apart from widespread efforts to shorten supply lines for transporting turbine components, Eyer cites other reasons for the industry's billowing sails.

"Part of this demand is driven by state legislation to reach 20 percent renewable energy sourcing by 2020. That brings wind and solar power into the mix," he says. "We anticipate continued growth over this 10-year build out."

The need for immediate capacity

and executing transport. Much like automotive manufacturers and suppliers, each party in the wind supply chain is a pull point in the demand-triggered process.

"The wind industry is just-in-time (JIT) oriented," says Bingeman. "The cost of having personnel and equipment in the field demands that shipments are staged efficiently and on time, that proper permitting is accounted for, and that there are minimal touches and handling."

Daily Express employs an in-house staff of 15 dedicated to permitting and project planning, giving the carrier total control over the process.

"This is important because wind farms and manufacturing operations run on JIT deliveries," says Eyer. "Customers depend on timeliness to manage supply chain complexity."

For every wind project, Daily Express' planning department surveys routings, explores turning radii, secures permitting, and double checks everything to make sure the job is done right.

The railroad has a little more flexibility in terms of documentation, but otherwise the rigors are familiar.

"With the railroad, there is no state or provincial permitting," says Bingeman. "But the industry has its

own dimensional clearance protocol to follow. We have to simulate rail cars moving across CN's network and through any interchanges, bridges, tunnels, and curves."

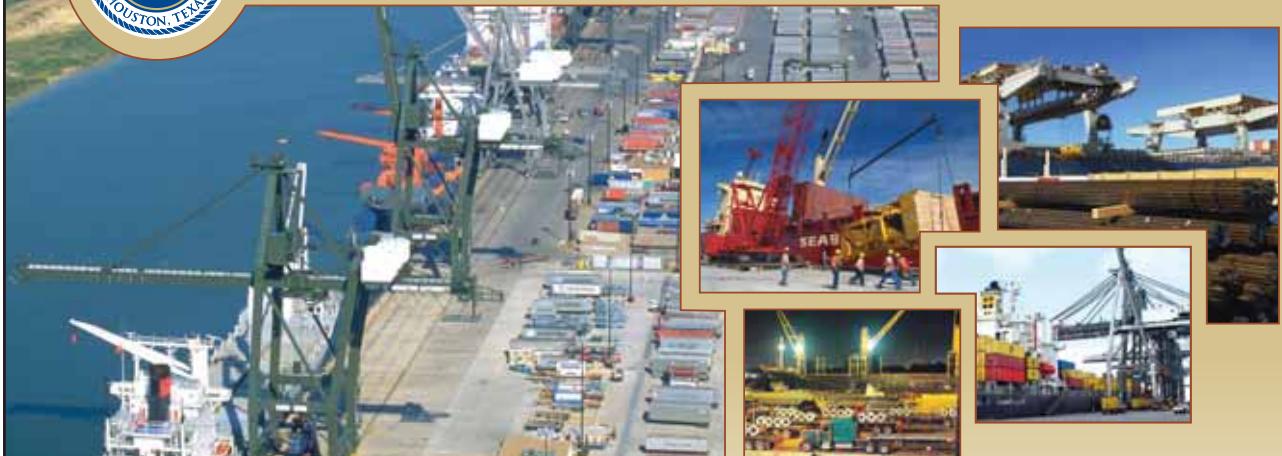
Because of the different mechanisms involved in managing wind project logistics, it's important to have one point of control over myriad administrative and operational tasks. Increasingly, customers want the complete solution—service providers and overseers who can connect all the pieces. Daily Express does this by providing its own project management service rather than

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outsourcing it to a separate party.

As part of its own transportation management offering, CNSS monitors the wind project supply chain from point of manufacture to final destination. "One set of eyes looks at the planning stages," observes Bingeman. "There are no external bodies for approval."

Moving forward, equipment, labor, infrastructure, and cost will likely be recurring challenges as companies keep pace with swift growth and climb their way out of the current recession. But over the long term, wind manufacturing promises to be a major economic stimulus that drives job growth, and as the industry matures, even greater collaboration among supply chain partners.

### THE WIND BLOWS BIG IN TEXAS

Beyond transportation and logistics, the wind industry is having a major impact on U.S. economic development. The shift in manufacturing stateside has unleashed a flurry of secondary activity as supporting industries sprout up around wind farms. Nowhere is this more apparent than in Dumas, Texas.

Situated on the Texas panhandle, the city of 14,000 inhabitants is in the heart of the North American wind corridor. Wind turbines literally surround Dumas. More telling, it is within three hours of wind farms generating nearly 2,000 MW of energy and an estimated 4,000 MW of proposed developments.

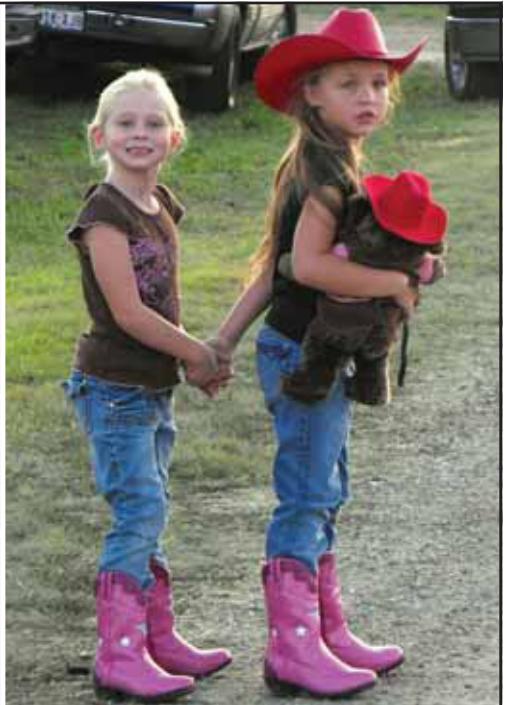
"The fact that we are located along the Ports-to-Plains trade corridor and

the wind corridor is a huge advantage for prospective wind business," says Mike Running, executive director of the Dumas Economic Development Corporation (DEDC). "It's a natural fit for companies, marrying transportation and wind power."

As part of its economic development strategy, DEDC is looking to create a latticework of smaller companies and support industries to attract bigger wind turbine and component manufacturers.

For example, in June 2009, Anemometry Specialists, Alta, Iowa, announced plans to locate a new office in Dumas. The company, which does pre-development work to identify areas for siting wind farms, expects to bring

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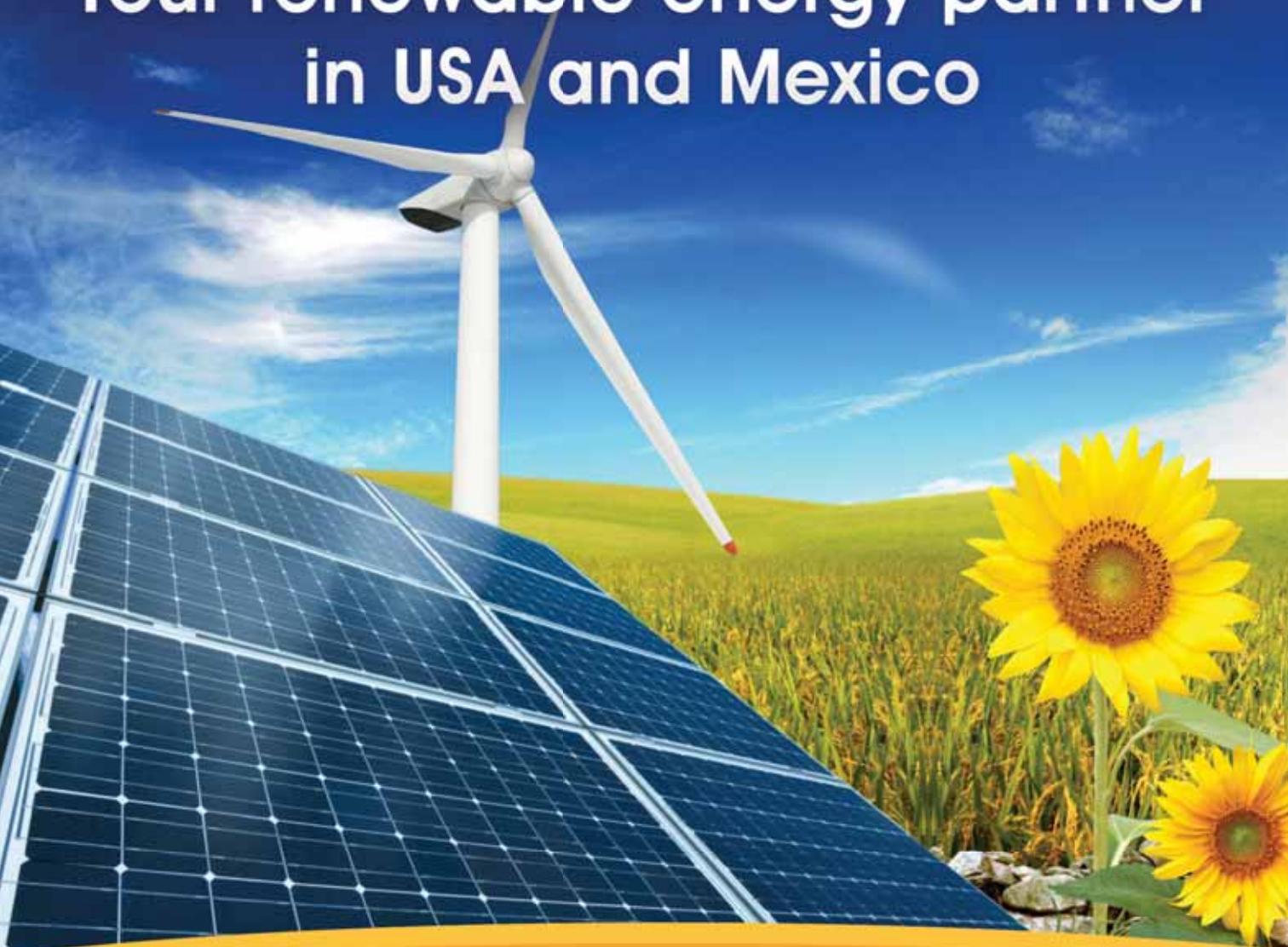


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as many as 16 technical wind energy jobs to the community. More recently, Wells Paint Service, an industrial paint company, joined the crowd.

The Kansas-based business is a good example of how the wind industry and areas such as Dumas are attracting unique investment opportunities. Wells Paint Service specializes in industrial painting for equipment such as oil and gas tank batteries, oil pump jacks, and fuel tanks. But it has also discovered a new niche in the wind industry—interior corrosion sealing for bolts used in assembling wind towers. The company has indicated growth plans that may bring as many as 30 new specialized painters to the community.

Wind manufacturing is triggering a cascading effect as supporting industries and suppliers give way to an infinite assemblage of other industries and suppliers.

“We’re just scraping the surface of the many service sectors that support wind

manufacturing,” says Running. “The key is getting the word and our name out there, and showing companies how the dots connect.”

### FROM RUST BELT TO GREEN BELT

Further afield in other areas of the United States, economic development agencies are making a concerted effort to attract bigger wind players. In some cases, they’re already there.

Toledo, Ohio, for example, is home to Owens Corning. The global glass fiber technology manufacturer, well-known for its building materials and composites applications, also produces 70 percent of the raw materials used to make turbine blades, says Steve Weathers, president and CEO of the Regional Growth Partnership (RGP), a nonprofit development corporation dedicated to fostering economic growth in Northwest Ohio.

The renewable energy industry is a logical evolution for economic development in Toledo.

“We have a history in heavy manufacturing, which positions us well for wind component manufacturing,” adds Weathers.

Then there is the transportation edge. Toledo is a major rail hub and has proximate access to the port, Lake Erie, and the St. Lawrence Seaway. The surrounding area offers well-entrenched intermodal access—rail, water, road, air, even blimp. Ohio Air Ship’s dirigibles provide heavy-lift services for project logistics moves.

As further proof of its wind manufacturing potential, two years ago RGP applied for a U.S. government program to locate a wind blade test facility in Toledo, citing its transportation accessibility and manufacturing pedigree. It finished second to Texas—a political casualty more than anything else, observes Weathers. Regardless, Northwest Ohio’s competitiveness is on solid footing.

“We won’t be a center for wind farms because we don’t have that type of energy capacity. But we do have a long-standing history of large-scale manufacturing and the ability to move product,” says Weathers. “The rust belt is turning into the green belt. The wind energy industry is reinventing the Midwestern town. It’s a natural evolution. We’re seeing a transition from the automotive sector into wind; the same applies for logistics support services.”

### AS THE BLADE TURNS

For areas such as Dumas and Northwest Ohio, the wind industry’s peripheral appeal is quickly coming into focus. In turn, economic development interests are digging in and preparing for a future land grab—which includes creating a new skilled labor pool.

The DEDC has been actively involved with Amarillo College, recently granting the school \$69,000 to establish a

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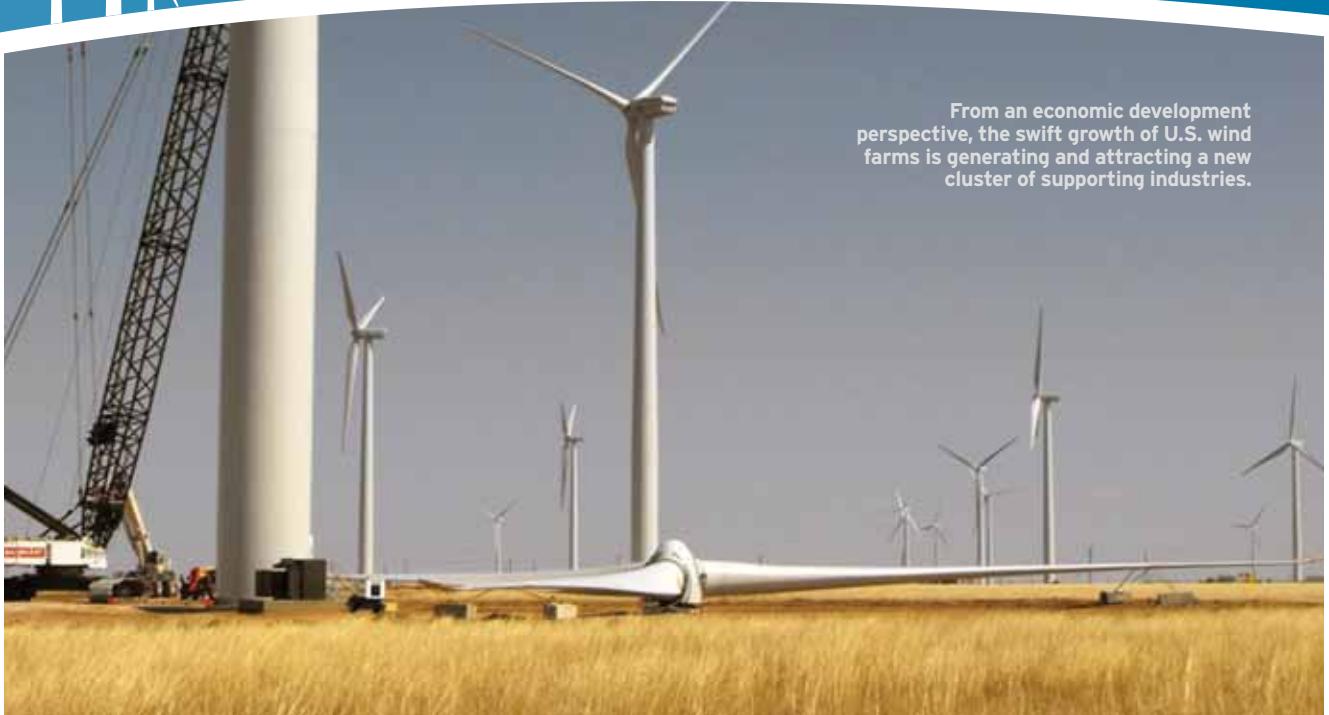
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From an economic development perspective, the swift growth of U.S. wind farms is generating and attracting a new cluster of supporting industries.

wind/renewable energy training program. The college offers a two-year wind and technical services curriculum, and a waiting list has already started.

"We're creating skilled labor that companies can select from. At our technology training center, we can even customize training specific to a niche need," says Running.

The RGP has similar ties to the University of Toledo, which has operated a renewable energy program for 25 years. In October 2009, Ohio Governor Ted Strickland announced that the university had been named a Center of Excellence in Advanced Renewable Energy and the Environment. The Center will continue to focus its research and technology development around solar, biomass energy, wind, energy storage, conversion, and management.

Beyond education, extant U.S. industries are beginning to see wind energy as a viable force for their own wellbeing. "From an agriculture perspective, farms are looking to install wind turbines on their properties. They're willing to work a deal and create a new revenue

stream," says Running.

"They're also beginning to see the value of renewable energy. Some dairy operations are looking for ways to reduce overhead and conserve energy. These industries feed off one another. They are a complement, not a replacement," he adds.

Still, in other areas of the country, notably in more populous locales on the East and West Coasts, wind turbines and their perceived impact on the aesthetics of the landscape, and the environment itself, have created vocal opposition.

But in Texas and Northwest Ohio, these concerns are relatively mute. "There is a not-in-my-backyard attitude in areas such as California," says Weathers. "But it does not exist in the Midwest."

In areas where the manufacturing and agriculture industries have been economic mainstays, public opposition to wind farming is negligible. Conversely, in Texas, turbines are becoming something of an attraction.

"There is a lot of enthusiasm for the wind farms surrounding our towns," says Running. "Visitors to Dumas

say the turbines look like a gateway to progress."

Don Quixote, in retrospect, might appreciate such sensibility.

*So saying, and commending himself with all his heart to his lady Dulcinea, imploring her to support him in such a peril, with lance in rest and covered by his buckler, he charged at Rocinante's fullest gallop and fell upon the first mill that stood in front of him; but as he drove his lance-point into the sail the wind whirled it round with such force that it shivered the lance to pieces, sweeping with it horse and rider...*

*"God bless me!" said Sancho, "did I not tell your worship to mind what you were about, for they were only windmills? And no one could have made any mistake about it but one who had something of the same kind in his head."*

So saying, U.S. industry has more sense. It has wind power nesting inside its collective brain trust. But it's not Renaissance fancy. It's modern reality.

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#### JobsInLogistics.com • www.jobsinlogistics.com

JobsInLogistics.com is the largest career and recruiting board on the Internet, specializing in logistics, manufacturing, supply chain, transportation, purchasing, freight forwarding, distribution, warehousing, 3PL, and materials management. With more than 23,000 registered employers and recruiters, and more than 450,000 logistics professionals' resumes, JobsInLogistics.com is the one and only place to find the top qualified candidates and the best logistics career opportunities.

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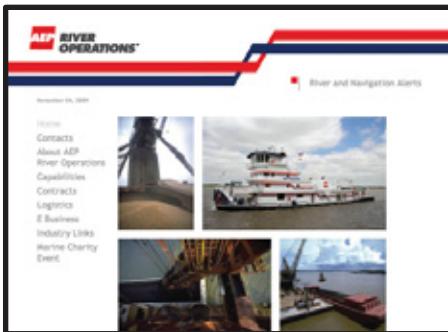
### SITE SELECTION

#### Dumas Economic Development Corporation • www.dumasedc.org

Dumas, Texas, is surrounded by six sites for wind energy. Each site has 10 megawatts of power, with eight to 16 turbines at each site. You can see wind turbines from U.S. Highway 152 from Dumas to Borger; U.S. Highway 287 from Dumas; and FM 281 from Etter to Sunray. The sixth site is currently being erected adjacent to the Valero-McKee Refinery. Wind energy is a big part of the Texas Panhandle, positioning Dumas to work with additional developers in the area on several proposed wind farms.



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#### AEP River Operations • www.aepriverops.com

AEP River Operations, headquartered in St. Louis, Mo., offers barge transportation of dry bulk commodities such as grain, project cargo, coal, steel, ores, and other bulk products, throughout the inland river system. AEP's fleet of 2,850 hopper barges ranks as one of the newest and most dependable in the industry, ensuring your product's quality and reducing delays that older equipment can cause. Complementing the company's barge operations is a fleet of 56 towboats.

#### BDP Project Logistics • www.bdpprojects.com

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IN THIS SECTION:

## Wind Power Logistics



**Daily Express Inc. • www.dailyexp.com**

Based in Carlisle, Pa., Daily Express Inc. is a local trucking firm that specializes in transporting oversized, overweight, and specialized freight on various-sized trailers. Daily Express also handles delivery of wind turbine components. With its fleet of more than 700 trailers, the company operates throughout the United States - primarily east of the Mississippi - from a network of 10 terminals.

**Georgia Ports Authority • www.gaports.com**



The Georgia Ports Authority (GPA) includes the Port of Savannah, the Port of Brunswick, the Bainbridge Inland Barge Terminal, and the Columbus Inland Barge Terminal. Its home page offers history and background about the Ports Authority, a port directory, shipping directory, GPA statistics, maps, photos, and more.

**Levelland Economic Development Corporation  
www.golevelland.com**



As the search for more environmentally friendly sources of energy continues, the Levelland Economic Development Corporation is leveraging the momentum and investment in wind, solar, and biofuels. Levelland, Texas, is growing its economy by positioning the community as a provider of logistical advantages to companies building the infrastructure needed to deliver green energy to market more efficiently.

**Regional Growth Partnership • www.rgp.org**



The Regional Growth Partnership is a private nonprofit corporation dedicated to fostering local, national, and international economic growth opportunities for Northwest Ohio and Southeast Michigan.

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To: Inbound Logistics  
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### OCEAN CMA CGM

CMA CGM's FAS Vietnam service now calls at Saigon Premier Container Terminal (SPCT) located nine miles south of Ho Chi Minh City. The new rotation is as follows: Port Kelang-SPCT-Phuoc Long-Catlai-Tanjung Pelepas-Port Kelang.

[www.cma-cgm.com](http://www.cma-cgm.com) 757-961-2100

### 3PLs

#### SynchroNet Intermodal Services (SIS)

A new sister company of SynchroNet Marine Inc., SIS provides ramp-to-ramp stack train transportation, capacity availability, customized asset management services, and online equipment visibility services previously provided by SynchroNet Marine's U.S. Domestic division. SIS also provides opportunities for container owners to reposition empty equipment throughout North America.

[www.synchroNetintermodal.com](http://www.synchroNetintermodal.com) 757-410-1762

#### BDP Project Logistics

BDP Project Logistics opened an office in Mexico City. The new location allows the company to better serve the Latin American market with customized logistics solutions supporting engineering, procurement and construction companies, mining, oil and gas, power generation, and other infrastructure projects.

[www.bdpprojects.com](http://www.bdpprojects.com) 281-233-4777

#### Laufer Group International

Global logistics management company Laufer Group International opened an office in Boston, which offers airfreight, ocean, and export services, as well

as customs brokerage and purchase order management.

[www.laufer.com](http://www.laufer.com) 617-884-8808

#### Weber Distribution

A new program called Consolidated Express Service offers set delivery times, and provides less-than-truckload (LTL) expedited services at full truckload rates. Serving food, beverage, health and beauty, and pharmaceutical customers, Weber consolidates consignees' LTL orders with other LTL orders being shipped to the same location by forming strategic alliances with grocery and retail distribution centers, big box retailers, and institutional

food service companies such as VONS, Target, and Walmart.

[www.weberdistribution.com](http://www.weberdistribution.com) 877-624-2700

### EXPEDITED UPS

Under its new carbon neutral program, UPS offers U.S. shippers the option of paying a small fee to calculate and offset the climate impact of each package they ship. The per-package price for the optional service is five cents for UPS Ground services and 20 cents for UPS Next Day Air, UPS 2nd Day Air, and UPS 3 Day Select services. UPS also



#### ▲ OCEAN: Wallenius Wilhelmsen (WWL)

China Express, WWL's dedicated Japan-Korea-China RoRo service, sails three times a month, carrying vehicles, rolling equipment, and non-containerized cargo. Sailings are being offered from the Japanese ports of Kobe, Nagoya, Toyohashi, Gamagori, Hitachinaka, and Yokohama to Pusan and Incheon in South Korea and Tianjin (Xingang), Shanghai, and Guangzhou (Xinsha) in China.

[www.2wglobal.com](http://www.2wglobal.com) 201-307-1300

implemented a carbon-analysis service for high-volume customers. With this service, available only on a contract basis, UPS calculates the carbon impact of a shipper's entire UPS shipping activity. The shipper can then use the calculations to purchase offsets directly or through UPS.

[www.ups.com/carbonneutral](http://www.ups.com/carbonneutral) 800-PICK-UPS

## PARTNERSHIPS

### Wared Logistics and Preferred Freezer Services (PFS)

Wared Logistics, a logistics and transportation services provider, and PFS, a global provider of cold storage warehouses, partnered to construct and manage refrigerated warehouses throughout the Middle East and North Africa (MENA) region. Initial warehouse facilities are targeted for Cairo, Egypt; Jeddah, Saudi Arabia; and Abu Dhabi, UAE, with plans for nine other regional centers. In addition, Wared Logistics will provide refrigerated trucking services in each region for delivery to end users, and global trade management, importing, and drayage services from the ports of entry to the distribution centers.

[www.waredlogistics.com](http://www.waredlogistics.com) 312-560-1200

[www.preferredfreezer.com](http://www.preferredfreezer.com) 973-820-4040

## HARDWARE

### Zebra

The 2824Plus desktop printer creates two-inch-wide labels for bar-code and package labeling applications, printing at a rate of four inches per second. The printer's small footprint makes it suitable for use where space is limited. Serial, parallel, and USB interfaces, plus networking options, provide easy system integration for a range of applications.

[www.zebra.com](http://www.zebra.com) 866-230-9494

### Tharo Systems Inc.

Tharo Systems Inc. introduced the H-600 Series, six-inch wide, thermal transfer bar-code label printers, which feature all-metal



### ▲ MATERIALS HANDLING: Westfalia Technologies

Designed from stainless steel for use in dairy and beverage facilities, Westfalia's new Fractional Quart Carton Caser packs 240 cartons per minute into single cases and uses a four-by-four packing pattern. It comes with dual in-feed carton conveyors, a case conveyor, and line breaks.

[www.westfaliausa.com](http://www.westfaliausa.com)

800-673-2522

construction with a cast aluminum center wall for added strength and a large media window for easy viewing and monitoring of supplies. Standard features include a high-speed USB 2.0 interface for fast data transfer and a real-time clock for label time- and date-stamping.

[www.tharo.com](http://www.tharo.com)

800-878-6833

## SOFTWARE

### TradeBeam

The latest version of TradeBeam's *i-Supply* collaborative inventory management product includes alerts and indicators to increase supply chain visibility. The Late Delivery Alert warns buyers that orders placed with a supplier for a specified delivery date have not yet been received at the delivery site, so buyers can investigate the delay and avoid manufacturing downtime. The Lean Logistics No Order Alert notifies the supplier when no

requirements for a given trading lane are generated for their pre-determined order schedule because the buyer has enough material in the pipeline.

[www.tradebeam.com](http://www.tradebeam.com)

888-311-1415

### Sterling Commerce

A new solution, *Sterling Always in Stock*, combines cross-channel order management with system integration capabilities, enabling retailers facing out-of-stock products to find the desired item in its network and provide customers with a choice of fulfillment methods.

[www.sterlingcommerce.com](http://www.sterlingcommerce.com)

800-676-9772

## WAREHOUSING/DCs

### Regal Logistics

Regal Logistics opened a new DC in Charleston, S.C., to service the southeastern United States. Offering up to 200,000 square feet of warehouse

space, the new facility is centrally located near major port, highway, rail, and airport access, and is designed for high-volume, quick-turnaround shipping with 30-foot clear height for maximum storage capacity and advanced technology infrastructure including a tier-one warehouse management system and real-time online shipment tracking.

[www.regallogistics.com](http://www.regallogistics.com) **253-922-2250**

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Frommelt Platinum Series High Performance Dock Seals have an outer reinforcing of high-strength, friction-resistant Durathon fabric, which protects against extreme wear and tear on high-traffic docks. Platinum series headers also feature Firefighter heat-dissipation protection – a triple-layer, reinforced foil

technology that prevents heat buildup from trailer marker lights that can lead to burning of dock seal headers.

[www.ritehite.com](http://www.ritehite.com) **888-456-DOCK**

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[www.airbridgecargo.com](http://www.airbridgecargo.com) **877-262-2746**

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[www.cevalogistics.com](http://www.cevalogistics.com) **800-355-0350**

**FedEx**

FedEx subsidiary FedEx Express completed two infrastructure projects within its global network: the expansion of its European hub at Charles de Gaulle Airport in Paris, France, and the expansion of its bonded warehouse at Guadalajara International Airport in Jalisco, Mexico. Both newly expanded facilities strengthen the company's ability to deliver service to customers around the world.

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**December 3-4, 2009, Global Supply Management Conference, Phoenix, Ariz.**

The Institute for Supply Management's third annual conference agenda includes session topics such as strategies for global sourcing, supply chain risk management, establishing professional credibility, and evaluating global manufacturing partners and strategies in uncertain times. Supply managers take home ideas to apply to their own global sourcing projects, and find inspiration in peers' success stories.

800-888-6276  
www.ism.ws

**December 9, 2009, Supply Chain Strategy and Management, Cambridge, Mass.**

MIT's Sloan School of Management presents this program to explore supply chain design's role in business strategy. Topics include how supply chain structures develop, overlap with industry structures, and are affected by the speed of industry change. Attendees learn guidelines for managing strategic sourcing and make-

buy decisions, methods for integrating e-business thinking into supply chain strategy, and "clockspeed benchmarking," a tool for deriving business insights and management lessons from industries with the highest obsolescence rates of products, process technologies, and organizational structures.

781-239-1111  
www.mitsloan.mit.edu/execed

**January 19-20, 2010, SMC<sup>3</sup> Winter Conference, Atlanta, Ga.**

Presented by SMC<sup>3</sup>, this event presents the latest economic, political, and business trends affecting supply chain and logistics professionals, with actionable ideas for 2010. A sustainability panel highlights how businesses are blending environmental impact initiatives with corporate responsibility policies to green their operations and bottom line. Attendees can connect with key decision-makers and peers at various networking functions.

800-845-8090  
www.smc3.com

**January 19-21, 2010, SCOR Users Seminar, San Diego, Calif.**

The SCOR Users Seminar is an annual event organized by the Supply Chain Council to share how the Supply Chain Operations Reference-model (SCOR) is used to streamline business processes. The educational event, designed for a broad supply chain audience including managers and directors with responsibility for all aspects of supply chain management, features speakers who are in various stages of implementing SCOR.

202-962-0440  
www.supply-chain.org

**January 20, 2010, Trade Asset Reallocation/Resource/Regulation Plan (TAR<sup>3</sup>P), Torrance, Calif.**

Doing more with less is the subject of this event, the American Association of Exporters and Importers (AAEI) western regional seminar. The program includes two 10+2 panels, each comprised of government or industry representatives. It also includes export, import, and legislative updates.

202-857-8009  
www.aaei.org

**March 14-16, 2010, AirCargo 2010, ChampionsGate, Fla.**

This event, sponsored by the Air and Expedited Motor Carriers Association, the Airforwarders Association, and the Express Delivery and Logistics Association, includes sessions addressing topics such as branding, security, and business operations.

703-361-5208  
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**March 30-April 1, 2010, U.S. Bank Financial Supply Chain Conference 2010, Orlando, Fla.**

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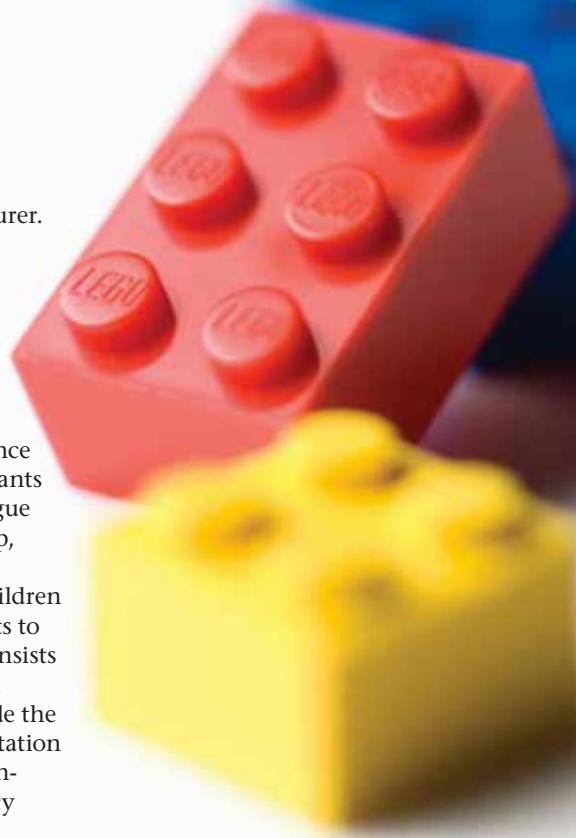
# THE **LAST** MILE

## Transportation Planning: Child's Play

"Only the best is good enough" is the guiding principle of The Lego Group, the Danish toy building-brick manufacturer. It's a mission that inventor Dean Kamen and his FIRST organization (For Inspiration and Recognition of Science and Technology) are taking to heart to inspire the next generation of transportation planning visionaries.

In collaboration with Lego, Kamen and his non-profit have been sponsoring the FIRST Lego League "Smart Move" Challenge for the past 11 years. This year, 146,000 children, ages 9 to 14, in more than 50 countries, will vie for top honors as they apply science and technology to address modern transportation issues. Participants will also have the opportunity to take part in the FIRST Lego League World Festival, held in conjunction with the FIRST Championship, April 15 to 17, 2010, at the Georgia Dome in Atlanta.

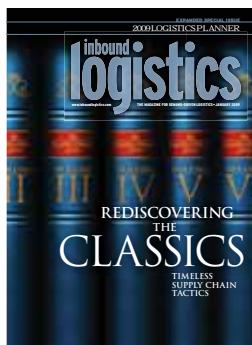
Using Lego MINDSTORMS technologies and play materials, children work alongside adult mentors to design, build, and program robots to complete missions based on real-world challenges. The contest consists of two parts. In the project phase, teams identify a transportation problem in their community, create a solution, and share it outside the team. In the robot part of the challenge, teams confront transportation safety and efficiency problems, and apply robotics and sensor technologies to fix them. The competition's missions include efficiency planning and object avoidance, among others.



Using Lego toys and technologies, "Smart Move" Challenge participants compete against peers to engineer robotic solutions that address existing transportation problems.



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