

# Logistics MANAGEMENT<sup>®</sup>

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## GLOBAL LOGISTICS


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compliance, United Solar,  
in front of panel displays.

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# Management UPDATE

AN EXECUTIVE SUMMARY OF INDUSTRY NEWS

## ■ Network plans on hold for YRC Freight.

Changes proposed by the largest subsidiary of YRC Worldwide to become more efficient through various network changes are now in flux due to required approval from the Teamsters. Some of YRC Freight's proposed network changes include: reducing corridor hubs and freight handling; eliminating and reducing end-of-line road domiciles; eliminating a distribution center; and reversing specified road primaries, among others. According to the Teamsters for a Democratic Union (TDU), the YRC Freight change of operations, which it said "aims to eliminate all utility employees and most end of line jobs," is on hold, with a planned YRC Freight hearing in early March.

■ **Class I railroads pump up capex.** The Association of American Railroads (AAR) said that the seven North America-based Class I freight railroads are on track to invest a record \$13 billion in capital expenditures for 2012, with the capital going towards expanding, upgrading, and enhancing the U.S. freight rail network. The AAR also reported that these seven railroads plan to hire more than 15,000 employees in 2012, with many of these positions allocated towards replacing retired workers and new positions. AAR officials added that with hundreds of infrastructure projects underway, privately-owned freight rail networks are maintained through these capital expenditures that have been at record levels for the last three years.

## ■ Lehmkuhl: LTL carriers making inroads.

In a recent interview with *Logistics Management*, Greg Lehmkuhl, president of Con-way Freight, said that the less-than-truckload sector has made great strides since the recession, and while the economy continues to show slow growth, the dynamics of the LTL industry have changed a lot over the past three years. "There is a ton of capacity that has come out of the industry, with carriers, including ourselves, closing service centers and reducing capacity as demand has flown back," said Lehmkuhl. He added that the industry is seeing more consistent equilibrium between supply and demand on an aggregate basis. "And after a real pricing decline in 2009-2010, carriers are

more focused than ever on ensuring that they are getting adequate price increases from their customers due to the investments they're making into their business."

■ **Cloudy container rate future.** According to analysts at the Paris-based consultancy Alphaliner, the uncertainty over the level of container freight rates in the next few months has severely disrupted trading on the freight futures market. Volumes traded at the Shanghai Shipping Freight Exchange, the most active market for container freight futures, crashed to their lowest levels since the trading of container freight futures started at the Chinese exchange in June 2011. The analysis comes as carriers and shippers prepare for new contract negotiations. Average daily volumes traded during the first week in February fell to only 15,000 twenty-foot equivalent unit (TEU) compared to the 169,000 TEU average recorded for January.

## ■ Flat annual volumes reports Port Tracker.

Even with a fairly active holiday shopping season, there was not a material uptick in import cargo volumes, according to the Port Tracker report from the National Retail Federation and Hackett Associates. Total 2011 volume hit 14.8 million twenty-foot equivalent (TEU) for a 0.4 percent increase over 14.75 million TEU in 2010, according to the report. Volume in 2010 was up 16 percent compared to a dismal 2009. The 12.7 million TEU shipped in 2009 was the lowest annual tally since 2003.

## ■ Good news and bad news for ports.

President Obama's fiscal 2013 budget contains some good news and bad news for U.S. port authorities. Even though the Administration's budget includes cuts in order to meet the Budget Control Act passed by Congress last year, there are bright spots for seaports, noted the American Association of Port Authorities. For example, there is a much needed increase in the portion of the U.S. Army Corps of Engineers' funding pertaining to deep-draft navigation maintenance, and funding for the Department of Transportation's budget that pertains to enhancing America's freight mobility. The 2013 budget proposal also includes

*continued, page 3 >>*

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# Management UPDATE

*continued*

a request for reimbursement from the federal Harbor Maintenance Trust Fund of \$848 million, representing a 12 percent increase over the fiscal 2012 request of \$758 million and would be \$28 million more than the \$830 million Congress appropriated for maintenance dredging in fiscal 2012.

■ **PNW unrest.** The Port of Seattle appears to be the latest battleground for the Teamsters' drayage agenda. Cargo operations were substantially disrupted last month, as union organizers enlisted scores of independent owner-operators in a "stop work" effort that put their colleagues in a bind. At issue here—and elsewhere on the West Coast—is how drivers who only work when freight needs to be moved can be fully employed as unionized labor. The Puget Sound's ocean cargo gateways are also under siege by state legislators seeking to pass Washington's House Bill 2527. If passed, this would give law enforcement professionals the power to determine if and when an intermodal container chassis is unsafe. It came as no surprise to most shippers that the Teamsters' are also supporting this law, as it would give them more power as a sanctioning body.

■ **IANA points to strong intermodal gains.** The Intermodal Association of North America (IANA) reported strong fourth quarter and full-year 2011 intermodal volumes. For the full year 2011, IANA reported total loadings were up 4.9 percent annually at 14,071,525. Fourth quarter volume was up 4.1 percent at 3,600,181. For both the full-year and the fourth quarter, domestic intermodal was the big winner in terms of share. A major reason for this is that it is increasingly becoming more capable of handling lanes which are considered one-day trips, and that various truckload shippers are working in tandem with railroads on developing intermodal corridors and terminals, according to industry stakeholders. IANA officials said that domestic container gains were prevalent in all regions it tracks, with "big box" domestic loadings of 48-foot and 53-foot containers posting their highest-recorded numbers for the fourth quarter and the full year.

■ **Curbing the air urge.** APL Logistics launched what it is calling "simultaneous optimization," a shipment-planning platform that could change the way large freight buyers coordinate their transportation activities. More importantly, the 3PL said that it can help keep shippers from opting for air cargo when ocean cargo becomes too slow. "ShipmentOptimizer creates value by taking complexities out of shipment planning and reducing unnecessary airfreights," said Raffy Cipriano, APL Logistics' vice president for supply chain technology. "The more complex your supply chain, the greater value the benefits." Fresh from a global rollout of ShipmentOptimizer with a sportswear shipper last November, APL Logistics said that it has already started to deploy the web-based planning and decision support platform for two other international apparel shippers.

■ **Big order in Asia.** Airlines in the Asia-Pacific region will take delivery of around 9,370 new aircraft over the next 20 years, according to the latest market forecast by Airbus. Valued at \$1.3 trillion, the deliveries will account for 34 percent of all new aircraft with more than 100 seats entering service worldwide over the forecast period, with the region overtaking North America and Europe as the world's largest air transport market. In the cargo sector, the region will continue to dominate the global market. According to the new forecast, the dedicated freighter fleet operated by Asia-Pacific airlines will grow from 300 today to some 820 in 2030, representing 30 percent of the global freighter fleet.

■ **U.S. Xpress names Harlin president.** Truckload and full-service freight transportation provider U.S. Xpress Enterprises Inc. announced that Ray Harlin has been promoted to president. Harlin replaces Pat Quinn who passed away in December. Harlin joined U.S. Xpress in 1997 as executive vice president and CFO. U.S. Xpress officials said that he will continue in his role as CFO. Prior to joining U.S. Xpress, Harlin held managerial and leadership positions during his more than 20 years with Arthur Andersen LLP and served as managing partner for Anderson's Chattanooga office. □

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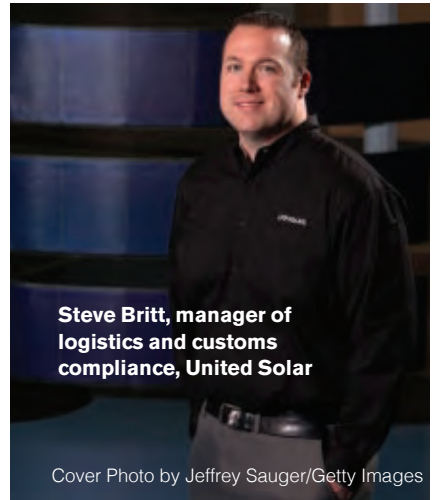


MARCH 2012

GLOBAL LOGISTICS

## United Solar's enlightened 3PL partnership

The solar panel maker is reliant on efficient manufacturing practices, but when it came to inbound shipping and distribution across borders, those operations began to suffer as the company grew. Here's how this progressive shipper partnered with its 3PL to save 25 percent on its inbound costs.

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**Steve Britt, manager of logistics and customs compliance, United Solar**

Cover Photo by Jeffrey Sauger/Getty Images

# Logistics MANAGEMENT®

### 2012 WAREHOUSE/DC EQUIPMENT AND TECHNOLOGY SURVEY

#### Momentum stalled

**32** Our study finds that overall market uncertainty has curtailed materials handling infrastructure spending and has increased facility consolidation and engineered process improvements.

### TRANSPORTATION BEST PRACTICES & TRENDS

#### 2012 Truckload Roundtable: Carriers gain upper hand

**38** Our annual panel convenes to paint a murky picture for truckload shippers due to increasing rates, unresolved regulatory shifts, and an increasingly competitive landscape.

### SUPPLY CHAIN & LOGISTICS TECHNOLOGY

#### WMS continues its reign

**42** Warehouse management systems maintained a strong footing in the supply chain software sector in 2011. Now, emerging markets are in line to fuel further WMS growth in 2012.

### WAREHOUSE & DC MANAGEMENT: RETROFITS

#### Wet Seal's slick transformation

**46** The retailer's impressive DC retrofit increased merchandise processing speed to its stores, improved accuracy to 99.5 percent, and significantly reduced transportation costs.



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## Logistics Management Webcast



### Q1 2012 News RoundUP: **Uncertainty remains**

#### Now OnDemand

With the continued shifting economic and regulatory landscape, shipper uncertainty continues to rise as we enter 2012. Today, keeping up with the news is important, but understanding how that news will affect your logistics operations is imperative.

During this 30-minute webcast event, Group Editorial Director Michael Levans and Group News Editor Jeff Berman will be joined by leading economic and transportation analysts in a detailed discussion designed to put the latest industry news into context.

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- The unfolding impact of CSA and the HOS ruling

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#### QUARTERLY TRANSPORTATION MARKET UPDATE

### Air Cargo: Is 2012 the turnaround year?

While analysts say this should be a growth year for air cargo, pressing challenges such as increasing EU regulation, the pent-up demand in Asia Pacific, and the cost of global security still weigh heavy on the sector. **50S**

#### AFTER MODEX 2012

### New show, new city, new solutions

Held for the first time ever, Modex 2012—the nation's newest expo for materials handling, supply chain, and logistics solutions—threw open its doors in Atlanta on February 6 at The Georgia World Congress Center. **55S**



## OnDemand Webcast

### Using analytics as a service to improve transportation operations

You know the questions that could help your organization improve its transportation performance. You even have the data to answer them. The hard part is finding the answers because the required information can be spread across various TMS, ERP, bid optimization, auto-tendering, freight audit, and pay systems, or even spreadsheets.

Join Frank Quinn, Editorial Director of *Supply Chain Management Review*, and Steve Morandi of Deloitte Managed Analytics for a look at *how business analytics solutions delivered as a service through the Cloud* can help organizations integrate disparate data from multiple sources effectively and efficiently.

**Attendees will also learn how Welch Foods Inc. used managed analytics to achieve ROI in the first 30 days.**

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# Collaborative efforts celebrated

OUR MARCH ISSUE INCLUDES COVERAGE of a number of recent collaborative efforts geared toward driving the industry forward through the power of a more unified voice.

First and foremost, the *Logistics Management (LM)* editorial staff would like to congratulate Mike Regan, head of NASSTRAC's advocacy committee and *LM* blogger, for successfully organizing the recent "Stand Up for Trucking" fly-in event held on Capitol Hill on February 1, the eve of a crucial highway bill mark-up.

Regan pulled together more than 100 shippers and truckers along with members of 12 freight transportation associations to blanket Congressional offices and educate legislators, as a unified front, on the effects that HOS, increasing tolls, and truck size and weight issues are having on trucking's productivity.

"Trucking is a national asset," said Regan to event attendees. "There are no issues specific to carriers. There are no issues specific to shippers. There are only issues that affect the entire country."

Our John Schulz joined the event and shares his report on page 16. "The feeling of camaraderie between shippers and truckers was impressive," Schulz told me after the event. "In the past, shippers have been left out of the conversation when it comes to lobbying, and it's hurt them. But this was a visible, meaningful show of support for the trucking industry at a time when it needs it the most."

News of often-opposed factions combining forces doesn't stop there. In fact, the very next news story (page 17) explains how the two largest, and most influential industry associations—the American Trucking Associations and the Associations of American Railroads—have issued a joint statement calling for the passage of H.R. 7, the American Energy and Infrastructure Jobs Act, a five-year, \$260 billion bill that puts a strong emphasis on trucking productivity.

While the two groups had been at odds on truck size and weight issues for years, it appears that they've found common ground in the bill's language.

We'd also like to congratulate the staff of the Material Handling Industry of American (MHIA) on their success with the first Modex (Feb. 6-9), a new expo and conference designed to pull materials handling, logistics, and supply chain management education together under a single roof. MHIA reported that over 20,000 visitors walked the floor and attended conference sessions.

*LM* has a special Modex review section starting on page 55S that highlights the diverse keynote lineup. The speakers covered a range of critical topics—from the Panama Canal expansion to a forecast of global trade. But what I found most impressive about the Modex event was the more than 30 educational events that were sponsored by 17 diverse, co-located partners including CSCMP, WERC, AST&L, and MHEDA, among others.

In fact, the Georgia Center of Innovation for Logistics co-located its annual Georgia Logistics Summit—a transportation, logistics, and global trade event—just upstairs from the 180,000 square-foot trade show of predominately materials handling products.

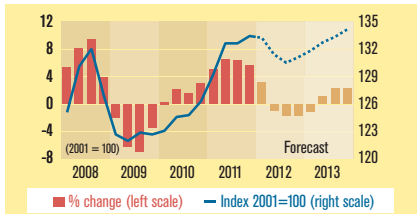
And when you broaden your scope, that juxtaposition will make even more sense after you read this month's Warehouse/DC Management case study on Wet Seal's recent retrofit project in Foothill Ranch, Calif. The story combines the implementation of new automated sortation inside the DC that's closest to the retailer's busiest inbound port.

The result: The retailer streamlined its receiving and shipping along with cutting Customs time and overall transportation costs—a near-perfect encapsulation of all supply chain elements working together.

**Michael A. Levans**, Group Editorial Director

Comments? E-mail me at [mlevans@ehpub.com](mailto:mlevans@ehpub.com)

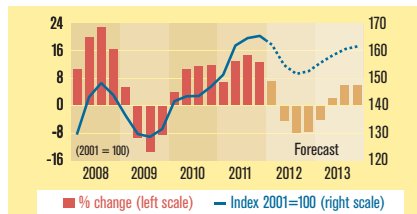
## Pricing Across the Transportation Modes



% CHANGE VS.:	1 month ago	6 mos. ago	1 yr. ago
General freight - local	1.4	1.4	2.8
TL	0.8	2.6	6.8
LTL	-0.5	2.4	7.1
Tanker & other specialized freight	0.2	0.0	3.9

### TRUCKING

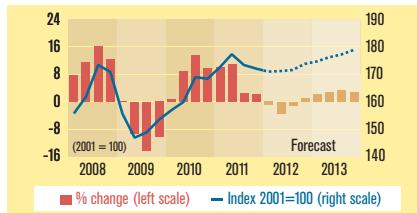
The trucking industry increased average transaction prices by 0.4% in the first month of 2012 compared to the prior month. Truckload carriers led the way with a 0.8% price hike. LTL tags, meanwhile, declined 0.5% on the heels of a 0.1% monthly price cut in December 2011. Overall, the cost of running trucking companies continues to outpace the prices that logistics managers pay for services. In the 12 months ending December 2011, our cost model shows trucking industry costs up 8.2% from the prior year. Fuel costs, up 33.6%, continue to be the inflationary culprit. At the same time, average prices charged by trucking companies, including fuel surcharges, increased only 5.8%.



% CHANGE VS.:	1 month ago	6 mos. ago	1 yr. ago
Air freight on scheduled flights	0.1	0.7	11.2
Air freight on chartered flights	3.1	1.2	-1.1
Domestic air courier	5.4	4.7	10.2
International air courier	4.1	3.4	8.9

### AIR

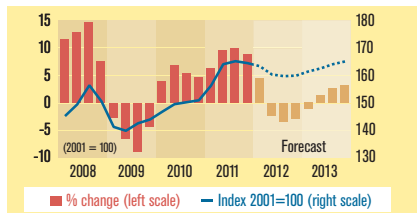
In January 2012, airfreight charter services pushed prices up 3.1% with help from an 8.9% price hike in international airfreight charter flights. Thanks to scorching fuel costs, the rationale for higher prices remains in tact. Our analysis shows the airline industry's overall costs increased 10.3% in 2011. At the same time, U.S.-owned airlines (passenger and freight combined) raised average transaction prices 7.4%. Last year, planes flying mail and freight via scheduled flights did best with a 12.1% price hike, while chartered airfreight companies saw a miserly 2% gain. (No wonder January saw such a big price jump.) Air couriers also reported price increases of 12.9% for domestic and 16.3% for international services in 2011.



% CHANGE VS.:	1 month ago	6 mos. ago	1 yr. ago
Deep sea freight	0.6	-4.8	-4.6
Coastal & intercoastal freight	0.0	0.3	1.4
Great Lakes - St. Lawrence Seaway	0.0	2.8	4.8
Inland water freight	0.3	1.3	9.7

### WATER

The water transportation services market is one in which a shift in the inflation trajectory has already occurred. After peaking in Q2 of 2011, average transaction prices reported by U.S.-owned shipping companies retreated in the second half of 2011. We think the final retreat will come in Q1 of 2012 to be followed by weak but steady price hikes thereafter. The inland waterways market, however, has the potential to force an upward revision to the forecast next month. After six consecutive quarters of price increases, inland waterway companies ended 2011 with prices up a strong 11.2%. January 2012 saw inland waterways prices up 0.3% and deep sea companies also reporting a 0.6% price gain.



% CHANGE VS.:	1 month ago	6 mos. ago	1 yr. ago
Rail freight	0.8	-0.1	7.1
Intermodal	-1.0	-0.7	5.3
Carload	1.1	-0.1	7.5

### RAIL

The rail transportation industry increased its average transaction prices 0.8% in the first month of 2012 compared to the prior month. That was the first monthly price hike in seven months. Carload led the way with a 1.1% price hike while intermodal rail tags declined 1%. Overall, the rail industry's cost escalation trends last year lagged behind the price escalation that logistics buyers faced. In the 12-months ending December 2011, our cost model shows rail industry costs up 5.9% from the prior year. At the same time, average prices charged by rail companies increased 8.7%. Intermodal rail prices ended 2011 up 10% and carload tags ended the year up 8.7%.

Source: Elizabeth Baatz, Thinking Cap Solutions. E-mail: ebaatz@alrtdata.com

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- ATA and AAR unite for passage of House transportation bill
- M&A: deals slipped in Q4, but 2012 should be a strong year

# NEWS & ANALYSIS

## TNT rejects \$6.4 billion bid from UPS for its Express unit

*Companies say they remain in discussions, but does FedEx wait in the wings?*

By Jeff Berman, Group News Editor

ATLANTA—Netherlands-based TNT N.V., a provider of mail and courier services and the fourth largest global parcel operator, rejected an offer by UPS for TNT Express last month.

*Bloomberg* reported that the unsolicited bid was for \$6.43 billion. The report stated that the offer was turned down by TNT’s board according to a company statement, adding that the companies still remain in discussions. Following discussions with TNT, UPS said that it made a revised, increased, and comprehensive proposal to acquire the entire issued share capital of TNT for €9 per share in cash.

Like TNT, UPS confirmed that the discussions between the companies remain ongoing, although there is currently no certainty that any agreement will be reached. UPS added that further details will be provided when appropriate.

These developments represent a change of heart for UPS. In December 2010, shortly after TNT first announced its plans to sell off its Express unit, it indicated it would not be a potential buyer.

UPS Chief Financial Officer Kurt Kuehn said at that time that UPS did not intend to make any large acquisitions in the future. But he noted that the company may be more inclined to focus on small- and medium-sized



acquisitions in Europe rather than buying TNT’s Express unit.

Using Deutsche Post World Net (DPWN) as an example, Kuehn explained that expanding too quickly into a region—as when DHL Express acquired Airborne Express in 2003 to establish a U.S. domestic presence—can be dangerous. DHL Express pulled out of domestic operations in the U.S. in 2008 due to severe financial losses and myriad challenges keeping up with UPS and FedEx.

In December 2010, TNT announced its plans to “demerge” operations by separating its Express and Mail operations into two independent companies, effective January 2011. Company officials said that the main reasons for an internal separation were the increasingly divergent strategic profiles of the two units and the limited existing synergies between them.

“Mail is faced with a continuously declining mail market in the Netherlands and has to focus on sustaining

solid cash flows and operational efficiency,” said TNT officials in December 2010. “Express’ priorities are to grow its existing strong European networks, to continue to grow the intercontinental business from and to Europe into adjacent markets, and to secure contributions from its existing strong positions in China, South America, and India.”

In May 2011, TNT N.V.’s shareholders approved the spin-off of its Express unit.

TNT N.V. said it would demerge Express and only focus on Mail activities and retain a 29.9 percent financial stake to cover separation agreements, which will be returned to shareholders.

When this process was completed, it increased speculation that TNT Express would be a prime acquisition target for either UPS or FedEx. DPWN is not viewed as a buyer because it would create a monopoly status in Europe, which would be unlikely to gain approval from the European Union and be protested by FedEx and UPS.

“TNT has gone to great lengths over the last few years to package itself for a possible sale, and they have been quite up front that ‘their phone lines are open’ to anyone who wants to call,” said Jerry Hempstead, president of Hempstead Consulting. “I think the key here is not that a rumored deal has been rejected, but that talks are still going on.”

Hempstead explained that first offers are generally rejected, with the hope of a higher price for shareholders. But he explained that, out of the box, UPS is offering a nice premium. “My gut tells me that the EU would have to approve a Dutch firm being bought by a U.S. company, and that such approval process would involve a protest from DPWN. One has to understand that DHL is the largest player in Europe by far and TNT is second. A TNT/UPS deal is a significant threat to DHL.”

What’s more, the parcel consultant noted that there is irony in the fact that UPS fought the acquisition of Airborne by DHL in 2003, which resulted in a massive financial loss for DHL because the integration of the cultures was a tad flawed. UPS, said Hempstead, may find the same challenge in Europe trying to manage TNT.

As for FedEx, the company said in

May 2011 it is not considering acquiring TNT’s Express business, explaining it was too expensive and that it does not need to do a deal in Europe like this.

But that mindset could change, said Wolfe Research President Ed Wolfe.

“We believe that Europe is a potentially higher growth and return parcel

market than the U.S., and we estimate TNT Express, DHL, UPS and FedEx control 18 percent, 16 percent, 14 percent, and 4 percent respectively of the intra-European market,” Wolfe wrote in a research note. “FedEx could be boxed out of Europe for a long time if UPS buys TNT Express.” □

## ACTIVISM

### Shippers give Congress “positive” message in supporting trucking

WASHINGTON, D.C.—Fanning out to lobby hundreds of members of Congress on the eve of an important highway bill mark-up, approximately 100 shippers and 12 associations blanketed Capitol Hill in an unprecedented “Stand Up for Trucking” event on Feb. 1.

“Trucking is a national asset,” said chief organizer Mike Regan, president of Tranzact Technologies and head of NASSTRAC’s advocacy committee. “There are no issues specific to carriers. There are no issues specific to shippers. There are only issues that affect the entire country.”

Some of those issues that members of NASSTRAC, the National Industrial Transportation League, National Private Truck Council, American Trucking Associations (ATA), Transportation

Intermediaries Association, Coalition for Transportation Productivity and other groups were discussing with Congress included:

**Hours of Service.** ATA still has what it calls “serious concerns” about the proposed 4-hour restart provision that some truckers say will cause them to run more trucks and hire additional drivers, raising costs.

**Highway Reauthorization.** ATA is supporting a longer-term (six years, ideally) bill that focuses on funding the 166,000-mile National Highway System, addresses highway congestion, and establishes a freight program to address interstate commerce.

**Tolls.** The trucking industry is opposed to additional tolling and leasing or selling of existing Interstate highways.

**Truck size and weights.** ATA wants “safe, responsible changes” in truck size and weight standards, increasing to 97,000 (from 80,000) the current interstate weight standard.

“If we’re going to get good legislation in the highway bill, it’s not going to be because shippers lobby for it or carriers lobby for it,” Regan said. “It will be because shippers and carriers went up to Capitol Hill together.”

Trucking industry leaders said they were extremely grateful for the public show of support by their customers at such a crucial time.

“As a trucker, I’m thrilled that our customers understand the importance of trucking,” said Barbara Windsor, chairman of Hahn Transportation, a major tank trucker. “People get elected



to Congress because of grassroots. This fly-in is another example of that. We feel that this show of support is great, and spreading the knowledge of the issues is the most important thing.”

ATA President and CEO Bill Graves said that “the fly-in came together a damn sight better than I thought it would,” and thanked attendees and organizers for taking time from their schedules to fly to Washington on the eve of a major markup on the proposed highway bill.

“As a former public official, I assure you that most public officials appreciate hearing from people representing important industries,” said Graves, a former Republican governor of Kansas. “They may not agree with us. But it’s an important part of the process.”

Graves said that the more than 7 million people employed by the trucking industry represent a “diverse” community, but warned, “Let’s not let our diversity divide us. Let’s not get down in the weeds where we can find something that can divide us.”

Similarly, Graves said that he was not in favor of trucking gaining something on Capitol Hill at the expense of other modes, specifically railroads. “I am for trucking, but I am not against anybody else’s mode,” Graves told the group during a planning session. “Everybody else is important.”

Toward that end, Bob Voltmann, CEO of the Transportation Intermediaries Association, which represents freight brokers, said that for too long transportation interests have been competing against each other. “We have been modally stove-piped and industry stove-piped,” Voltmann explained. “Transportation is the lifeblood of the country, and we need to get serious about transportation and get serious about moving goods to market.”

Regan said that his group accomplished three main objectives of the Feb. 1 event: “We got carriers and shippers to understand there are common issues; we helped legislators understand that while freight does not vote, freight transportation is incredibly important component of U.S. economy; and we showed legislators that shippers are pro-safety and mode neutral.” □

—John D. Schulz, Contributing Editor

## LEGISLATION

## ATA and AAR put up united front for passage of House transportation bill

WASHINGTON, D.C.—In an effort to move along a new surface transportation reauthorization, two of the largest and most influential freight transportation industry associations—the American Trucking Associations (ATA) and the Association of American Railroads (AAR)—issued a joint statement calling for the passing of H.R. 7, the American Energy and Infrastructure Jobs Act, a five-year, \$260 billion bill with an emphasis on truck productivity.

While the ATA and AAR have been at odds over the years for issues relating to truck size and weight, the bill initially called for a measure to increase truck weights from 80,000 to 97,000 pounds on interstate highways at the discretion of states that want to have them. This provision was focused on raising the weight limit to 88,000 pounds for car carriers and 97,000 pounds for six-axle trucks.

But soon after the bill was introduced, the House Transportation & Infrastructure Committee voted against this provision by a 33-22 measure and drafted an amendment that requires the United States Department of Transportation to conduct a comprehensive three-year study of the safety and pavement performance of the widespread use of bigger trucks, according to the American Association of State Highway and Transportation Officials.

“As the U.S. House of Representatives prepares for floor consideration of H.R. 7, the AAR and the ATA join together to urge Members to oppose any floor amendments that would modify any of the truck size and weight provisions in the bill that was reported out of the House Transportation and Infrastructure Committee on February 3,” said Edward Hamberger, AAR president and CEO, and Bill Graves, ATA president and CEO in the joint statement.

They added that the long-term reauthorization of the nation’s critical sur-

face transportation programs is necessary and long overdue, explaining that the passage of H.R. 7 by the House is an important step in the process of reaching an agreement of a long-term, fully-funded surface transportation bill.

ATA Vice President of Communications and Press Secretary Sean McNally told *LM* that while the ATA

**“Outside of the truck productivity issue, there is a lot we are happy to see in both the House and Senate bill [MAP-21].”**

—Sean McNally, ATA Vice President of Communications and Press Secretary

and AAR had their difference over truck size and weight provisions while the bill was being marked up, both groups acknowledge there are a lot of good things regarding productivity in the bill.

“This is taking one potentially controversial item off the table as the House tries to pass the bill, move to the Senate, and then move to conference and into a final piece of legislation that gets signed into law,” said McNally. “Outside of the truck productivity issue, there is a lot we are happy to see in both the House and Senate bill [MAP-21].”

With regard to the productivity issue in the House, McNally added that “we are disappointed that the vote went the way it did, but in the interest of getting a bill that is now 30 months past due, let’s all pull on the rope in the same direction.”

McNally said that there are still differences that need to be worked out, so the sooner that those issues are addressed the faster the benefits can be realized for all transportation users. □

—Jeff Berman, Group News Editor

## MERGERS & ACQUISITIONS

### PwC says transportation and logistics deals slipped in Q4, but 2012 should be a strong year

NEWYORK, N.Y.—Fourth quarter transportation and logistics merger and acquisition activity was not as strong as it was in the third quarter, but the end results were mostly impressive, according to PricewaterhouseCoopers (PwC) quarterly report *Intersections: Fourth Quarter 2011 Global Transportation and Logistics Industry Mergers and Acquisitions Analysis*.

According to the report, fourth quarter deal value—for deals valued at \$50 million or more—was \$12.8 billion and represents 32 announced deals. This is below the third quarter, which saw 46 announced deals at \$14.2 billion and the second quarter's \$13.4 billion, but it was ahead of the first quarter's \$10.9 billion. The average deal value for the fourth quarter was \$400 million. Of the 32 announced fourth quarter deals, four involved U.S.-based targets or

acquirers.

Of the fourth quarter deals, the breakdown by mode for deals valued at \$50 million or more was as follows: 34 percent were rail, 4 percent were trucking, 19 percent were logistics, 11 percent were passenger ground, 14 percent were shipping, and 18 percent were passenger air.

For all of 2011, PwC reported that there were 170 deals valued at greater than \$50 million, with a total value of \$51.3 billion, compared to 2010, which had 186 deals valued at \$107.9 billion. The firm said that the reason for the \$56.6 billion gap was due to the fact that there were 19 deals valued at \$1 billion or more in 2010 compared to 11 in 2011.

"The third quarter looked very strong, but when discussing it early

in the fourth quarter we were a little nervous that the worldwide economic events, which began in August or so, would give us a kind of a hangover regarding deal activity in the fourth quarter," said PwC U.S. Transportation and Logistics Sector Leader Ken Evans. "Sure enough, we did see that happening, with a decrease in deal activity in the fourth quarter."

But now in 2012, Evans said things feel a little bit more stable, adding that PwC expects 2012 to be another strong year on the transportation and logistics deal-making front for various reasons.

One reason he cited is increasing activity in Russia, such as the fourth quarter's \$4.22 billion completed deal of Freight One, a railroad carrier, from state-owned Russian Railways by Universal Cargo Logistics. Russian-based deals could continue to rise, says Evans, due to the broad cross-sector privatization plan from the Russian government that is expected to raise a significant amount of capital. □

—Jeff Berman, Group News Editor

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Focus on driving



## More unintended consequences

I WANT TO DRAW YOUR ATTENTION to developments in Washington that threaten to overwhelm shippers with new liabilities that carriers have traditionally controlled.

As most logistics professionals know, a transportation agreement and a bill of lading have been the cornerstones to a successful shipper/carrier partnership. Historically, these documents have been recognized as the documents that separate the liability of the shipper and carrier.

Over the many years, there has been an understanding that the carrier is strictly responsible for the cargo or lading and for the behavior of their crews and drivers. Recent federal and court actions have changed that, and the legal wall is crumbling thanks to our friends inside the beltway. In fact, shipper liability for poor safety practices of the carrier is being established in court cases referencing new federal safety regulations.

Federal Motor Carrier Safety Administration's (FMCSA) Compliance, Safety, Accountability (CSA) Safety Measurement System (SMS), or CSA/SMS, is a federal program designed to establish a public safety rating system for carriers. The intent was to encourage carriers to get feedback based on their operational performance against a safety standard or scorecard. Law enforcement would use the scores to remove unsafe drivers and highlight systematic behavior by carriers.

Recently, a few tort attorneys have been successful in convincing the courts that the shipper should use this publicly available information for carrier and driver selection—and if they fail to do so should be liable for damages if the carrier has an accident.

This change has been creeping up since the 1990s when shippers' employees who loaded hazardous materials on trucks became regulated and subject to training and personal liability. The regulations and

subsequent court actions have made the shipper and the shipper employees a part of the transportation liability picture—at least for hazardous materials. Now comes liability for the actions of a carrier on the way to the destination for all types of cargo.

Am I being overly concerned? Well, if you're doing business in Australia you know how this story goes. That country now has "Duty of Care" language and several new federal agencies looking closely at transport safety for all modes. For highways there's the Office of Road Safety (ORS). For other modes there's the Australian Transport Safety Bureau's Civil Aviation Safety Authority (CASA),

**As shippers, we need to take a fresh look at the carriers we choose, at the language in our contracts, and at the ratings of our carriers.**

the Australian Maritime Safety Authority (AMSA), and state and territory rail safety regulators.

The Duty of Care principle, which grew out of similar safety ratings as our CSA/SMS, has been interpreted in court cases to mean that carriers and shippers, both companies and individuals, may be held liable for accidents throughout the move if they are judged to have had some control over the incident.

For example, a shipper loads a carrier late in the day and the driver, unbeknownst to the shipper, pushes through to the destination resulting in an accident due to fatigue. In court, the shipper may be held liable as a party to the accident. The closer the shipper to the driver (a broker or dedicated fleet shipper), the easier it is to establish a Duty of Care. This idea will have tort attorneys salivating and could establish a precedent for our friends in Washington.

As shippers, we need to take a fresh look at the carriers we choose, at the language in our contracts, and at the ratings of our carriers—especially when brokering cargo through third parties—to ensure adequate protection.

In attempting to promote safety for the carriers they regulate, regulators have opened the door to a reshaping of the relationship between shippers and carriers. Once again: unintended consequences. □

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# PS&OP: A tool for profitable growth

IN *LOGISTICS MANAGEMENT*'S APRIL 2010 issue, we introduced Profit, Sales, and Operations Planning (PS&OP), a way to align supply chain decision-making with high-level financial goals and long-range strategic planning. Since that time, more companies have begun implementing PS&OP-like approaches—using financial data, scenario modeling, and analytics to concurrently optimize sales, balance demand and supply, and maximize profits.

Since 2010, Accenture has enhanced and refined the PS&OP operating model. As shown in this month's figure, the model's design parameters are governed by a handful of industry characteristics (external factors that a company cannot alter significantly) and management characteristics (practices and behaviors that the company defines and adopts).

view, but it can still be a useful way to conceptualize PS&OP.

More useful still, particularly because instructions for complex operating models rarely fit into a short column, may be a discussion of how Profit, Sales & Operations Planning can help companies deal with many of today's dominant issues, such as:

- *Permanent volatility.* Supply chain upheavals in the first decade of the 21st Century included natural disasters, financial roller coaster rides, oil price shocks, jarring commodity price movements, and the rapid emergence of a middle (consumer) class in various parts of the developing world. Many now see these shifts as representative of a state of "permanent volatility." PS&OP can make it easier for companies to accommodate permanent volatility by providing the information needed to rapidly shift short-term procurement

## The influences and characteristics of a PS&OP model

### Business environment

#### Industry characteristics

- Product/process complexity
- Product life cycle
- Channel complexity
- Supply chain volume/velocity
- Service supply chain
- Defining characteristics

#### Management characteristics

- Business strategy
- Business unit structure
- Organizational structure
- Supply chain strategy
- Manufacturing strategy



### PS&OP operating model design

#### PS&OP Foundation

- One plan
- Cross-functional teams
- Accurate data
- Optimal consensus
- Explicit performance measures
- Use of analytical tools



#### PS&OP Variables

- Process ownership and roles
- Governance structure
- Organizational capability
- Planning horizon
- Planning granularity
- Financially focused metrics

The model's design parameters are governed by a handful of industry characteristics and management characteristics. This is a 50,000-foot view, but it can still be a useful way to conceptualize PS&OP.

The model itself comprises foundational cornerstones (design guidelines that are largely similar to traditional Sales & Operations Planning) and key variables (financial issues and components influenced by industry and management characteristics). This, of course, is a 50,000-foot

activities, redesign sourcing strategies, and rationalize manufacturing operations.

- *Shifting market dynamics.* In the occidental world, roughly 80 percent of manufactured products flow through organized retail channels. However, most emerging markets have fewer organized retail channels; more local shops and markets that stock small quantities of product; and a large number of fluctuating labor issues. PS&OP can help companies adjust supply chain approaches to accommodate new supply and demand dynamics.

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For example, sudden demand growth or facility closures in a certain area may automatically trigger PS&OP-enabled decision-making processes for scenarios such as increasing production in a different region, altering product mixes, or developing new pricing schemes. PS&OP also adds value to network redesign efforts necessitated by shifts in sourcing and selling.

- *Sustainability.* Many companies are using resources more judiciously, increasing their adoption of alternative fuels, and using more green packaging. These commitments to environmental and social responsibility are key, but companies also are responsible to shareholders. For this reason, sustainability efforts require financial justification. This is part of PS&OP's bailiwick, given its ability to help integrate supply chain issues with company-wide decisions about growth, profitability, and competitiveness. With PS&OP, organizations are better able to analyze the cost of "doing the right thing."

- *Quality and safety?* Shareholders and consumers are less and less tolerant of product and service failings, which is why quality and safety must be embedded more completely into supply chain planning. Even when traumatic quality or safety events have already happened, supply chain mastery can play a huge role in areas such as labor deployment and service and spare parts management. PS&OP can help companies by focusing not just on cost-efficient planning but the financial implications associated with quality or service failures.

- *Supply chain risk.* Supply chain risk can be associated with natural disasters, the addition of far-flung partners, shorter product life cycles, sudden shifts in demand, quality breakdowns, political instability, cyber intrusions, and supply disruptions and vendor failures. PS&OP can be a potent risk management tool simply by virtue of its ability to link financial performance with supply chain performance. However, PS&OP tools also spur better monitoring of supply chain problems, thus ensuring faster and more informed responses. PS&OP also helps companies understand where risks exist across the supply chain, how much exposure

each identified risk creates, and what actions might be taken to reduce the amount of exposure.

Implementing a Profit, Sales & Operations Planning capability is not easy. If it was, virtually all companies would already have done it, because integrating unit/volume

planning with financial/profitability planning is clearly a smart thing. Despite the complexity, such implementations are worth considering, given every company's desire to grow profitably and every supply chain executive's mission to make his or her field more valuable. □



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## \$5 diesel: A tale of two coasts and the gulf between

AS I'M WRITING THIS COLUMN the CNN news ticker reads, "Oil Prices Spike on Iran Export Halt. Is \$4 Gas Next?" The article proceeds to pour over the fact that the price for West Texas Intermediate (WTI) bumped up 4.3 percent over the week to reach \$104 per barrel.

Of course, readers of this column understand that a temporary glut in Cushing, Okla., has resulted in WTI diverging from all other benchmark crude streams.

Consequently, though the WTI price spike is of interest, it provides little insight into how gasoline and diesel prices are likely to develop. Both the refiner average acquisition cost (RAAC) and the average crude oil import cost provide far more insight into how gasoline and diesel markets are likely to evolve in the short term.

The fact that WTI is flirting with the \$100 mark is impressive, but a myopic focus on WTI hides even more impressive statistics. The average price paid by refineries throughout the whole of last year totaled \$101.79. In January 2012, the average refinery paid \$107.25, and we can expect to see refiners on the East Coast paying even higher prices than the RAAC now and into the future. It is only a matter of time before these costs are passed on to the consumers of end products like gasoline and diesel.

Come summertime, the thought of \$4 gas could make us long for "the good old days," but this is not simply because oil prices are increasing on the back of Iran's disorderly conduct. Rising diesel and gasoline prices are best explained as a tale of two coasts and the gulf between.

On the East Coast, gasoline and diesel prices are just beginning to be impacted by refinery closures in the Northeast U.S. and the Atlantic Basin more generally. The doors to two of Sunoco's Pennsylvania refineries were recently shuttered, and the ConocoPhillips refinery will soon follow suit. Combined, these three refineries have the capacity to produce 315,000 barrels per day (b/d) of gasoline and 143,000 b/d of ultra low sulfur diesel (ULSD)—and they account for 50 percent of the Northeast's total refining capacity.

The EIA expects that these shortages will be addressed through imports of refined products from the Gulf Coast and the Atlantic Basin more broadly, but significant barriers exist.

The Colonial Pipeline connecting Gulf Coast refineries to the East Coast is already running at near full

capacity. The next best options are to move product by train or barge. Unfortunately, much of the tanker train capacity has been deployed in an effort to transport shale oil from the Bakken.

When it comes to barge service, shipping refined products from the Gulf Coast to the East Coast will require expensive Jones Act vessels—and lots of them—to make the nearly 2,000 mile journey around Florida and up the coast. As I'll explain later, coastal trips are about to get a lot more expensive due to emissions regulations that will soon come into play.

Elsewhere in the Atlantic Basin, a similar story is unfolding. The 350,000 b/d Hovensa refinery at St. Croix in the U.S. Virgin Islands is set to shut down this month; and in Europe, Petroplus, owner and operator of five refineries, recently initiated insolvency procedures.

The challenges confronting Petroplus are hardly unique. The *Oil & Gas Journal* reports that nearly 40 percent of the European Union's 104 refineries are in need of refurbishment; but given that upgrading requires hundreds of millions of dollars of investment per refinery and the banks are unwilling to make these risky loans, it's likely that other European refiners will soon join Petroplus in insolvency.

### So what gives?

The price for both gasoline and diesel has never been higher in the months of January and February, so how can refiner margins be so low? And why is it that another 1 million b/d of Atlantic Basin refinery capacity is set to disappear this year?

Refinery closures result from a toxic combination of high crude prices, dramatic shifts in the geography of crude oil production, a significant increase in ethanol production, and a profound shift in the market for refined products.

Here in the U.S., the average price refiners paid for imported crude oil was \$85 per barrel in January 2008, but it stands at \$108 today, an increase of 27 percent. By contrast, the average price for gasoline on the East Coast increased by only 11 percent over this same period.

Gasoline prices remained insulated from the rising cost of crude for a couple reasons. On the supply side, ethanol production increased rapidly over this period of time. Today, roughly one in ten gallons of gasoline consumed in the U.S. is derived from corn-based ethanol, which is a substitute for gasoline but not diesel. Moreover, European gasoline demand has been supplanted

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by diesel, and old, inflexible European refineries were set up to maximize gasoline output. As a consequence, Europe's surplus gasoline was, and is, exported to the U.S. East Coast.

As gasoline supply climbed relative to diesel, U.S. gasoline consumption fell as a consequence of the recession. Only now is it rebounding as the economy limps along the path of recovery. With fuel economy increasing, however, demand is not likely to recover to pre-recession levels.

In December, the average U.S. refiner lost 2 cents on every gallon of gasoline produced.

Retooling refineries to lift earnings by maximizing diesel production is prohibitively expensive, and we should expect Atlantic Basin refining capacity to deteriorate further.

On the U.S. West Coast, a significant demand-side shock threatens to materialize as MARPOL Annex VI emissions regulations will come into effect in August. MARPOL 73/78 is an international marine environmental convention. It has been signed by all the largest economies and more than 130 countries in total. Annex VI, which governs air pollution from ships, outlines a progressive reduction of sulfur emissions to be accomplished by setting limits on the allowable level of sulfur permitted to be present in bunker fuels.

Beginning August 1, 2012, the new sulfur limit for all maritime fuels for vessels operating within the North American Emissions Control Area (ECA), which extends 200 miles from the U.S. and Canadian shorelines, will drop from 3.5 percent to 1 percent. The only way that this new regulation can be met is by either blending low sulfur distillates with the high sulfur fuel oils currently used as bunker, or by simply running on low sulfur marine gas oil, a refinery product that is very similar to diesel.

Under "the solution to pollution is dilution" approach, roughly two gallons ULSD will need to be used to cut each gallon of heavy fuel oil. Alternatively, vessels can run on straight low sulfur marine gas oil (LSMGO), which has a sulfur content of less than 1 percent.

On the shore-side, blending down creates demand for on-highway diesel, and in the short run refiners cannot increase LSMGO output without reducing the output of ULSD. Come August, already tight diesel

markets on the West Coast will tighten further, and prices have nowhere to go but up.

There are essentially two reasons why the MARPOL regulations, which govern both coasts, disproportionately impact the West Coast. The first is that the crude oil fed to refineries on the East Coast is 'sweeter' than crude sent to West Coast refineries. Consequently, less desulfurization is required.

The second is that far more Jones Act coastal shipping occurs on the West Coast. Nearly all goods consumed in Alaska are transported by barge or container

**As markets work their magic, we should expect the price of diesel and gasoline to rise: first on the coasts, and then in the gulf between.**

ship from the Puget Sound. Most of these vessel strings will need to run LSMGO for the entire roundtrip voyage. Through this derived demand, MARPOL regulations will drive up West Coast diesel prices.

Despite all the puffery regarding U.S. energy independence, we operate in a global market where refineries have been unable to keep pace with the rapidly changing structure of liquid fuels demand—and the oil transport system has been unable to keep pace with the emerging geography of crude oil supply. And this latter fact brings us back to the Gulf between the two coasts.

Currently, the spread between WTI and Brent (the European crude stream of equivalent weight and sulfur content) is roughly \$17 per barrel. This differential provides a significant incentive for anyone who is able to engage a physical arbitrage.

The pipeline operator, Enbridge, plans to capitalize on this differential by reversing the flow of crude through the Seaway Pipeline, which currently carries imported crude from the Gulf Coast to Cushing. Sometime this summer, oil will begin flowing from Cushing to the Gulf where it will be loaded onto tankers and shipped to higher priced markets. When this happens, the Cushing glut will be diminished, and the suppressed prices currently enjoyed by Gulf Coast and Midwest refineries will begin to erode.

As markets work their magic, we should expect the price of diesel and gasoline to rise: first on the coasts, and then in the gulf between. □

# United Solar's enlightened partnership

**The solar panel maker is reliant on efficient manufacturing practices, but when it came to inbound shipping and distribution across borders, those operations began to suffer as the company grew. Here's how this progressive shipper partnered with its 3PL to re-engineer its logistics model to save 25 percent on its inbound costs.**

BY PATRICK BURNSON, EXECUTIVE EDITOR

As one of the world's largest producers of thin, lightweight solar products, United Solar has manufacturing facilities in Mexico, the U.S., and Canada. Given the advantages of the North American Free Trade Agreement (NAFTA), one might assume that its logistics team would have conquered the major regulatory obstacles associated with cross-border trade. However, fast company growth presented other, more daunting supply chain challenges back in 2008.

Despite the organization's history of innovation, the vexing problem of inbound management began to surface as a major concern right around that time. Before then, United Solar used a manual process to ship their inbound freight through multiple transportation providers. Each of their North American plants independently managed shipments to their facility

from all of their vendors.

But as their organization expanded, this approach created several challenges. First, orders were not always being routed via the most cost-effective method. Furthermore, less-than-truckload (LTL) and truckload (TL) were usually the only transportation freight services considered. Missed optimization opportunities resulted in inefficiencies and lost savings.

Steve Britt, who joined United Solar in early 2009 as manager of logistics and customs compliance, shakes his head when recalling some of the major problems back then. "Nearly every trade lane had its own carrier and mode of service," says Britt. "You essentially had to use an improvised matrix to determine who moved what. But there really was no long-term model created."

According to Britt, that knowledge was essentially held in the head of the corporate logistics coordinator at that



**Steve Britt, manager of logistics and customs compliance, United Solar**

JEFFREY SAUGER/GETTY IMAGES

time. “She functioned too much as a dispatch in managing these shipments,” says Britt. “While she did a good job handling the moves, the effort was extraordinary.”

As a consequence, destinations were “under-served,” but the problem was deeper than that. The physical movement of goods was inefficient. Britt remembers occasions when two trucks would be driving side-by-side on the same expressway bringing inbound cargo—both only half filled.

“LTL was used based on number of pallets rather than cost considerations,” says Britt. “This was obviously a waste of funds and resources.” And because of the effort and urgency of movements at the time, Britt says that it was very easy to get swept into the “just get it moving” mindset.

In addition, working with multiple TLs, LTLs, and 3PLs created a manual, time-consuming process for managing freight. Limited visibility to freight in-transit made it difficult to answer shipper queries or assess carrier on-time performance.

Finally, some vendors invoiced United Solar for freight-delivered costs on their orders. This made it difficult to know whether the most efficient shipment method had been selected or if freight charges were in line with the market. But the complications didn't end there.

### Expedited obstacles

With United Solar's plants already running around the clock, demand for expedited services threw more complications into the mix, says Britt. “There were times that faster shipments were needed for various reasons—quality issues, supplier short-ships, broken machine parts, late truck arrivals—and when you're relying on just asset-based motor carriers, the job can't always be done,” he says.

Transportation within the domestic market meant moving a lot of shipments from the East Coast to the West Coast he adds, and for that standard transit, the lane is long, indeed.

“We've had times when a truck left en route on a normal run and during that time an issue occurred at the

## “Our 3PL checks on shipment authorization, which allows us to better control the supply chain.”

—Steve Britt, manager of logistics and customs compliance, United Solar

plant that required expediting,” says Britt. “Ideally, we would divert it to a station to have the pallets pulled. Then we could have some of the cargo flown to its destination, while the rest of the load moves as scheduled by truckload.”

But that meant marshalling all of United Solar's administrative team to work with an expeditor and multiple transport providers.

“It was at that point that we took a step back to evaluate the whole process,” says Britt. “Then we used our imaginations to see what we could

come up with. Finally, we put a plan in place to get us there.”

### More than a beauty contest

Britt and his logistics team soon began exploring numerous asset- and non-asset based carriers. They also looked at well-known 3PL's and many LTL companies in search of a single point of reference, a competitive cost, and a high level of service.

“We evaluated roughly 15 to 20 different options,” says Britt. “But because we had an existing relationship with C.H. Robinson, and a good experience with them, we gave them the first chance to see what could be done.”

For United Solar, that meant it needed a provider to “take ownership” of its supply chain. According to Britt, this was part of a larger company-wide initiative driven by the purchasing, materials management, and logistics groups to work more collaboratively with its supply base and form better partnerships. So, from

## Solar making sense

United Solar is not alone in believing that there's never been a better time than now to be part of the “sustainability” business.

According to a new global study by MIT Sloan Management Review (MIT SMR) and Boston Consulting Group (BCG), energy-saving products like flexible solar panels occupy a central and permanent place in corporate boardrooms.

The study, titled *Sustainability Nears a Tipping Point*, found that two-thirds of companies see sustainability as necessary to being competitive in today's marketplace, up from 55 percent a year earlier. In addition, two thirds of the respondents said management attention to—and investment in—sustainability has increased in the last year.

The study focuses on “Harvesters”—or the 31 percent of companies that say that sustainability is contributing to their profits. Harvesters are not merely implementing individual initiatives such as lowering carbon emissions, reducing energy consumption, or investing in clean technologies, but they are changing their operating frameworks and strategies.

According to the report, Harvesters tend to have a distinctive organizational mindset and design that supports sustainability. Compared to non-Harvesters, Harvesters are three times as likely to have a business case for sustainability. They are also 50 percent more likely to have CEO commitment to sustainability, twice as likely to have a separate sustainability reporting process, and twice as likely to have a separate function for sustainability.

Harvesters are also 50 percent more likely to have a person responsible for sustainability in each business unit and more than 2.5 times as likely to have a chief sustainability officer.

With news like this, don't be surprised to see more 3PLs partnering with shippers like United Solar in this “greener” marketplace.

—Patrick Burnson, Executive Editor



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**“We’ve greatly improved our communication with our partners, and that has extended into our 3PL. Suppliers now have explicit instructions on whom they should be contacting for freight movement, and what information should be supplied.”**

—Steve Britt, manager of logistics and customs compliance, United Solar

the beginning of this new era, C.H. Robinson’s strategic account manager began collaborating with United Solar’s facilities and vendors, coordinating the inbound freight to each facility.

“We’ve greatly improved our communication with our partners, and that has extended into our 3PL,” Britt says. “Suppliers now have explicit instructions on whom they should be contacting for freight movement, and what information should be supplied. Our suppliers have grown a relationship with our outsourced account manager and that has greatly helped the flow of materials.”

At the same time, says Britt, United Solar now has “a gate keeper” who ensures suppliers are shipping appropriately.

“There are no more shipments simply showing up at our doors,” he says. “Our 3PL checks on shipment authorization, which allows us to better control the supply chain.” For example, in the past, the company had suppliers that would get orders ready early and try to ship them at the end of the month. “Obviously, this would be a benefit to them, based on shipping terms, but it would place inventory on our books earlier than needed,” adds Britt.

With the current structure of checks and balances, however, this no longer happens, and that has helped United Solar to maintain its inventory levels.

#### **Collaboration with a capital “C”**

While the 3PL’s systems provided business analytics to contribute to the collaboration and inform continuous improvement, United Solar implemented the 3PL’s website to track shipments and customize reports to the needs of each plant. Visibility to orders in the pipeline greatly increased, and

reports were customized to help United Solar monitor key metrics and identify new areas for savings.

Together, says Britt, United Solar and its 3PL built a supplier matrix that documented key parameters, including key contacts, shipping and receiving hours, and other important vendor requirements. The matrix offered visibility into these details and made them available to the plants. And as the 3PL began to unbundle the vendors’ transportation expense from product costs, United Solar gained new information for supplier comparisons and negotiations.

“Our product remains unique within the solar market,” says Britt. “Our lightweight, thin, flexible solar panels are differentiated versus the commodity-based solar products that most people are familiar with. Internally, we’ve leveraged the lightweight and flexible characteristics of our product to create packaging and shipping methods that allow us to ship the largest number of kilowatts per conveyance in the industry.”

Britt also notes that his packaging and shipping teams have improved this over the past several years, and they now “weight out” trucks before they fill them.

When a specific project requires United Solar to arrange distribution for its customer, their 3PL allows them to quickly quote and reliably move products. As with their inbound material flow, they now have greater visibility to the movements, and are able to provide its customers with various service options and competitive costs to meet the requirements of the projects.

“This leads to a better landed cost of product and truly contributes to the bottom line,” says Britt.

United Solar has now engineered their logistics model in conjunction with their suppliers and 3PL to utilize multi-stop trucks that they refer to as “milk-runs.” Each supplier now ships on a fixed-day, variable-quantity method based on Kanban cards. Kanban, created by Toyota in the 1950s, is a scheduling system that helps determine what to produce, when to produce it, and how much to produce.

This allows one truck to stop at two to five suppliers and allows United Solar to fully utilize the trailer. This approach takes advantage of the geographical locations of suppliers and has produced significant cost savings for the company. It also makes the act of shipping very straightforward for the suppliers and has lessened their effort in scheduling pickups as well as provides the plants with a consistent date of delivery.

The 3PL is also helping United Solar in the global marketplace as well. While the EU remains its largest overseas market, the company is working with its 3PL to penetrate South America and Asia. Customs compliance and other regulatory challenges are being worked out on a country-by-country basis, Britt says.

“Expanding our addressable markets and having the ability to ship product internationally in a time and cost efficient manner is something we need from a 3PL,” says Britt. “For example, our 3PL provided us with a bonded warehouse in Italy to prevent value-added taxes and customs liability while holding product for an extended period of time.”

Achieving savings up to 25 percent, the two companies continue to collaborate on creating new efficiencies. Openness and willingness to share accurate information contributes to identifying the best solutions for United’s supply chain.

Operating on a large global scale gives our 3PL the kind of leverage our company needs,” says Britt. “Global leverage.” □

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—Patrick Burnson is Executive Editor of Logistics Management



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2012

# Warehouse/DC Equipment and Technology Survey: Momentum stalled

Our 2012 exclusive study finds that overall market uncertainty has curtailed materials handling infrastructure spending and has increased facility consolidation and engineered process improvements. Cost containment has returned as the most important issue of the day.

BY MAIDA NAPOLITANO, CONTRIBUTING EDITOR

## 2012 State of Warehouse/DC Equipment and Technology Survey

Questionnaires were e-mailed in January to *Logistics Management* and *Modern Materials Handling* readers by Peerless Research Group (PRG) yielding 314 total respondents from manufacturing (30 percent), warehousing (30 percent), corporate (29 percent), and aligned logistics professionals (11 percent). Revenues of responding companies range from large—24 percent have sales of \$500 million or more—to small—45 percent are under \$50 million. Only those responses from management and personnel involved in the purchase decision process of materials handling solutions were considered.

**W**hat a difference a year makes. Our 2011 results showed that we were finally turning the corner, with budgets for materials handling equipment spending increasing from an average of \$395,000 in 2010 to \$451,000 in 2011. However, our 2012 *State of Warehouse/DC Equipment and Technology Survey* conducted for *Logistics Management* and sister publication *Modern Materials Handling* by Peerless Research Group (PRG) shows forward momentum has stalled.

Average anticipated spending over the next 18 months has barely budged at \$451,700. In an economy that's still fighting for recovery, 60 percent of the survey respondents are either taking a "wait-and-see" approach by only making purchases that are critical for business, or holding off on any investing



DANIEL GUIDERA

whatsoever. Ninety-two percent of the respondents have rated cost containment as their number one most important issue today.

Our experts are not surprised. “Market uncertainty has curtailed materials handling infrastructure spending,” says Lawrence Dean Shemesh, this year’s president of the Warehousing Education and Research Council (WERC) and president and CEO of OPSdesign Consulting, a NJ-based supply chain consulting firm. “We’ve seen a profound shift to facility consolidations and labor reduction through engineered process improvements that are not reliant upon materials handling spending, but are aimed at reducing costs.”

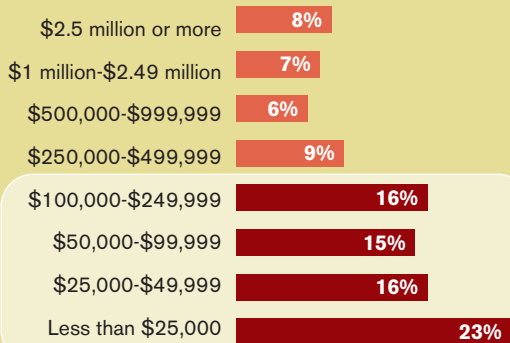
According to Robert Muller, senior consultant and engineer also from OPSdesign, in the past two years, companies are investing only when they

## Level of spending in the next 18 months

In total, over the next 18 months, approximately how much do you expect to spend on materials handling equipment and information systems solutions?



Spending level is **statistically unchanged** from last year.



For 2012, **70%** plan to spend **less than \$250K** on materials handling equipment and information systems solutions.

Source: Peerless Research Group (PRG)

really have to. “And respondents are not investing on extensive materials handling solutions, even those with a favorable three-year payback. Instead, they’re looking for a quicker return on their investment.”

Over the next few pages we’ll dig deeper into the data gleaned from the 2012 survey results while tracking changes in the materials handling market over the past year. We’ll then zoom in on specific areas that managers are planning to invest, track which “best practices” respondents are considering, identify the hottest green initiatives, and then peer into our respondents’ outlook for the future.

**Top level findings: No quantum leaps**

A closer look at respondents’ spending plans shows that in the next 18 months 70 percent are going to be investing less than \$250,000 on materials handling and information systems solutions. “These are not major materials handling warehousing and distribution projects,” notes Shemesh. “There may



**“We’ve seen a profound shift to facility consolidations and labor reduction through engineered process improvements that are not reliant upon materials handling spending, but are aimed at reducing costs.”**

— Larry Shemesh, president of WERC, CEO of OPSdesign

be some marginal improvement that they’re looking for in terms of equipment configuration and layout, but based on these numbers they’re not engaging in quantum leaps in terms of technology.”

Muller agrees: “The respondents that are actually doing real upgrade projects are those 15 percent in the million dollar-plus range where companies may be actively investing in new software or new equipment. Everyone else is probably adding some racks or some lift trucks as existing infrastructure ages and needs replacement.”

In fact, this year there has even been a significant drop in the number of respondents that have a pre-approved annual capital expenditures budget for materials handling solutions—from 60

percent in 2011 down to 48 percent this year. Shemesh speculates that funds that organizations have available to invest in themselves are being funneled to what he calls “top-line generating” activities, such as marketing and research and development, as opposed to warehouses and distribution operations. “Concurrently, by spending more on these top-line activities, they’re squeezing every last drop of productivity out of the existing infrastructure systems on their backend or support operations.”

On average, manufacturing and warehousing operations are still operating at activity levels of about 60 percent of capacity—a steady decline from pre-2008 levels of over 70 percent. Although the slow economy may have had a thing or two to do with this decline, Muller also attributes this to the smaller lot runs occurring as a result of more widespread implementation of just-in-time (JIT) strategies.

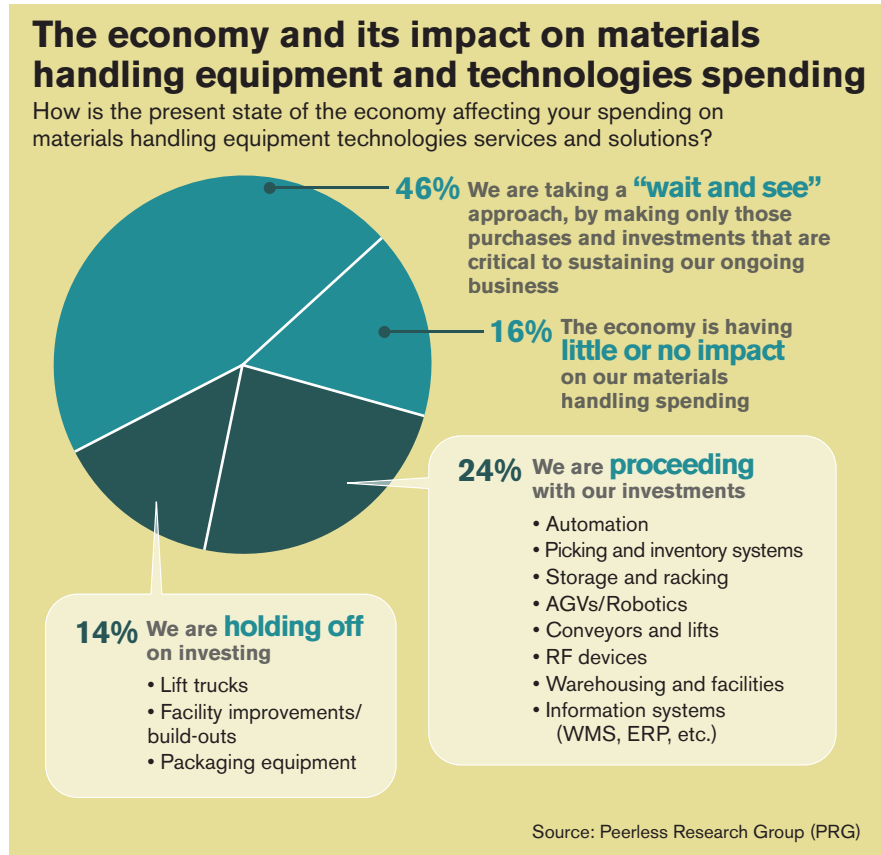
“Production runs for many of our manufacturing clients are getting smaller,” says Muller. “They’re using the same amount of resources to produce a little bit less.” He says that JIT is also being pushed in many warehouses. “Instead of picking full pallets, they’re picking at the layer or case level, so as to support the JIT programs of their customers.”

These days, adds Shemesh, no company wants to hold inventory in its supply chain. “As a result, vendors and suppliers who have JIT capabilities are better poised to serve their clients and will gain market share as a result.”

**What’s on the shopping list?**

While the budget for this year’s materials handling spending is still not as big as many had hoped, there are a number of key areas in which supply chain organizations are planning to invest over the next 18 months.

The top three are (1) new equipment/new equipment upgrades (73



percent); (2) information technology hardware/software (51 percent), and (3) staffing/labor (40 percent). However, we found a significant increase in the number of respondents who will be spending on maintenance services this year—37 percent, up from 23 percent over the previous year. “Companies are holding on to existing infrastructure and applying the ‘Band Aid, bubble gum, and duct tape’ that might be necessary to keep them running,” says Shemesh.

There also seems to be a greater focus on enterprise applications with 23 percent of respondents planning to spend on enterprise resource planning (ERP) and customer relationship management (CRM) systems, up from 12 percent last year. Shemesh attributes this to the increasing numbers of acquisitions and mergers he’s observed over the past two years. He relates how these mergers may sometimes wind up with two enterprise systems such as SAP on one side and Oracle on the other side. “Much effort must then be expended on either choosing one of these two systems or bridging the two with some middleware or fully functional warehouse management systems (WMS) that reports and harvests from each ERP,” says Shemesh.

Lift trucks and accessories actually top the list for specific materials handling equipment that companies plan to evaluate or consider in the next 12 months, while WMS and ERP top the list for information management systems.

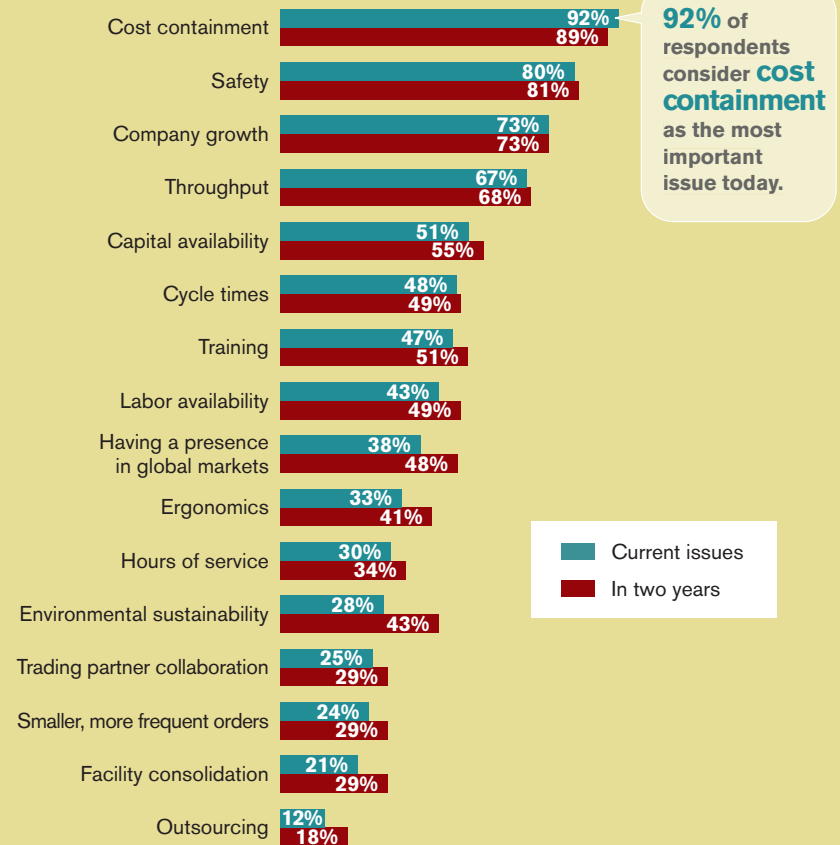
### 2012 best practices on the rise

More JIT initiatives have also put greater emphasis on workload planning and labor productivity and measurement best practices for those in distribution. “With JIT, particularly in retail, there’s uncertainty in what orders are coming in next week and the week after,” notes Muller.

“The workload is difficult to judge as volumes can be 20 percent less one week than the previous week. Without good workload planning, it’s difficult for companies to manage their staffing and workload.” Shemesh suggests leveraging your WMS to increase the real-time visibility of product within the warehouse, while developing key performance indicators (KPIs) and other standards to

## Important issues today and in two years

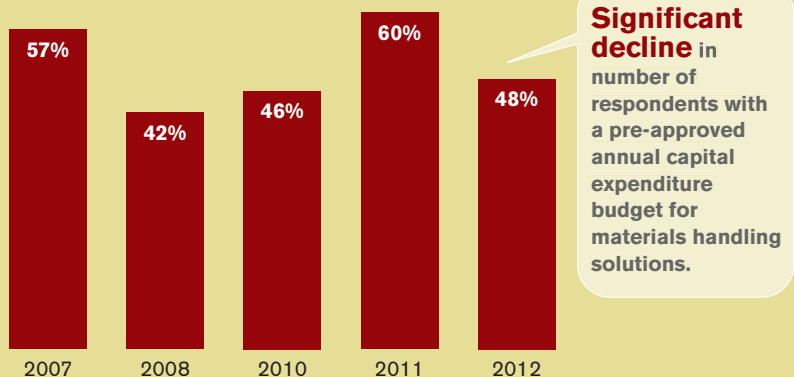
How important are each of these issues today? Two years from now, how important do you expect these issues to be?



Source: Peerless Research Group (PRG)

## Pre-approved capital budget for materials handling solutions

Do you have a pre-approved annual capital expenditures budget for materials handling solutions?



Source: Peerless Research Group (PRG)

manage employees and allow you to better plan your operation moving forward. “Of course, sharing real-time business intelligence between customer and supplier will help smooth the operational turbulence,” says Shemesh.

Another best practice that’s continuing to gain prominence according to our respondents is same-day order shipping. Today’s consumers have been spoiled by the speed-of-light Internet connectivity and the handful of companies such as Zappos and Amazon that pioneered same-day order shipping or next-day order shipping. “It’s become something that consumers are expecting at this point in time,” says Shemesh.

Recycling remains the top green initiative with 78 percent of respondents putting some level of program into action, followed closely by lighting fixtures and/or controls (69 percent), and fans to circulate cool or warm air (58 percent). “Social and political pressure from the marketing and public relations side of the business to be environmentally responsible is becoming increasingly apparent,” states Shemesh. “But at the same time they’re not pulling the trigger on these projects unless there’s a reasonable return on investment that comes along with them.”

**Risk management gains momentum**

What happens in the event of natural disasters, power failures, or system crashes? While most (79 percent) say that they have a risk management plan, Shemesh is surprised by the 29 percent

**“The respondents that are actually doing real upgrade projects are those 15 percent in the million-dollar-plus range where companies may be actively investing in new software or new equipment.”**

— Robert Muller, senior consultant and engineer, OPSdesign

of respondents that have yet to put a plan into place. “In most of our conversations with clients, it’s one of the first questions that comes up, particularly when you’re looking at single distribution center models,” says Shemesh. “Those supply chain organizations not addressing risk mitigation tactics are putting themselves in grave danger.”

When respondents were asked in which areas they had risk management plans in place, supplier risk was at the top of the list. Muller says he can understand why this is the top most concern. “With the volatility in the overseas mar-

ket, suppliers can go out of business.” He points out how delays in overseas shipping from suppliers can spell disaster—particularly for JIT operations.

**Sales secrets**

Shifting gears to the equipment purchase process, our survey shows how respondents clearly expect more from their vendors and providers beyond the actual purchase of a materials handling solution. Eighty-nine percent of respondents consider after-sales service and support as high priorities. More specifically, spare parts inventory availability (64%) top the list as the most important after-sales support service. Last year, maintenance was number one.

Shemesh believes companies are looking for ways to cut costs. “They’re reducing their expenditure on preventative maintenance, driving their equipment to the ground. When it breaks, which it will, they need to know that their spare parts inventory is available.”

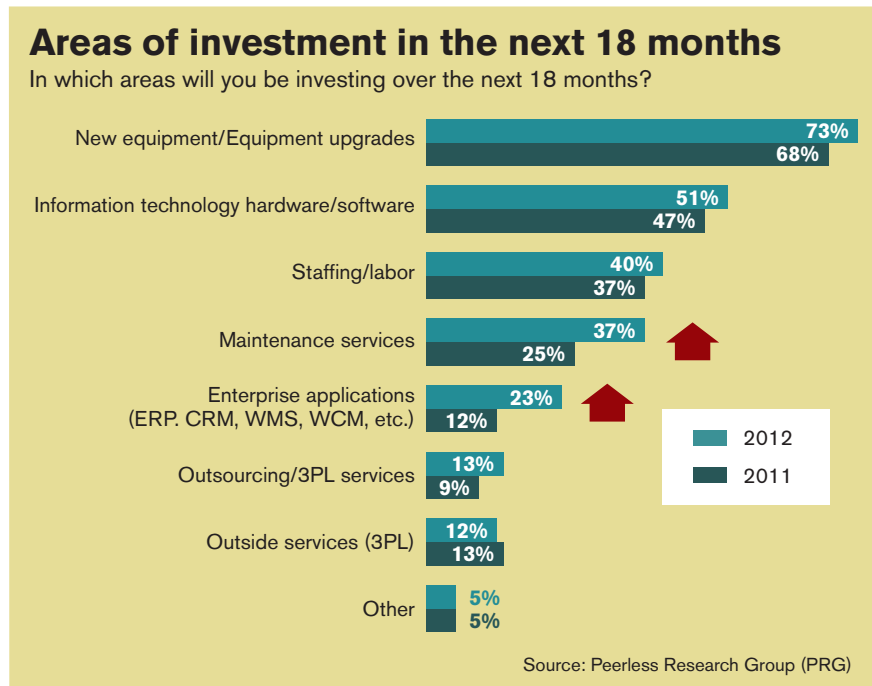
**What’s ahead?**

With budgets flat, Shemesh already sees how the bulk of his consulting activity has been coming from consolidations, mergers and acquisitions, cost-cutting measures and “have-to” projects. In particular, he notes that supply chain software specification, selection, and integration projects are also becoming an increasing percentage of his overall consulting projects in recent years.

When respondents plan on only a modest investment in capital, he believes those projects are in essence, “Triage work aimed at stopping the proverbial bleeding. Wish-list projects are just not making it onto the radar screen.”

And with the economy remaining the way it is, the materials handling equipment and technology industry’s short-term future is simply not as rosy as previous years. In the next two to three years, fewer respondents (55 percent, down from 62 percent) are planning to increase their spending. “They might have been over-optimistic building excess capacity in the past and are just now realizing it,” adds Muller. □

—Maida Napolitano is a Contributing Editor to Logistics Management





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# 2012 Truckload Roundtable: Carriers gain upper hand

**Our annual panel convenes to paint a murky picture for truckload shippers due to increasing rates, unresolved regulatory shifts, and an increasingly competitive landscape.**

BY JEFF BERMAN, GROUP NEWS EDITOR

**T**he market outlook for truckload (TL) shippers has been an increasingly difficult story to tell. The reasons for this vary, but at the top of a growing list of issues we find the prolonged driver shortage, increasing diesel prices, the seemingly endless shifting of government regulations, and the rollout of new trucking safety programs.

These challenges remain at the forefront for TL shippers at a time when supply chain operations costs continue to grow at an accelerated clip. But while the TL market is becoming increasingly difficult to manage, our panel, consisting of some of the foremost trucking experts in the country, insists that this is no reason for shippers to throw in the towel on the mode just yet.

Joining *Logistics Management* this year to help provide insight into the current truckload market as well as how shippers can better manage this critical mode of transport are John Larkin, managing director of the Stifel Nicolaus' Transportation & Logistics Research Group; Noël Perry, managing director and senior consultant at FTR Associates; and Donald Broughton, managing director at Avondale Partners LLC.

**Logistics Management (LM): How would you describe the overall condition of the truckload marketplace over the last year?**

**Noël Perry:** Over the course of 2011 there was a modest pause in a surprisingly strong trucking rebound, with capacity remaining relatively tight. A couple factors combined to create a rough equilibrium in pricing pressures. The slow volume growth eliminated the strong cyclical pressure on capacity that had significantly increased capacity utilization in 2010. Were it the only factor, capacity utilization would have fallen in 2011.

However, the slowly growing effect of CSA information

sufficiently restrained truck capacity to offset the slow tonnage growth. As a result, capacity utilization remained in the 96 percent range, still below the peak of the last upturn, but tight enough to create higher-than-inflation rate increases.

**John Larkin:** Indeed, the truckload marketplace in 2011 was characterized by balanced supply and demand. Slowly growing freight volumes combined with the significant reduction in capacity that took place during the great recession, and that continued as the FMCSA began rolling out its plethora of safety-related regulations to create an environment that allowed carriers to move prices up significantly, but not as spectacularly as might have been possible if the economy had demonstrated more robust growth.

**LM: What effect did these conditions have on TL rates?**

**Larkin:** Well, TL prices continued to rise as truck manufacturers worked to incorporate improved fuel efficiency, reduced emissions, and enhanced safety into their products. Used trucks were in short supply and, as a result, used truck prices rose dramatically. Fuel prices remained volatile as some shippers talked of re-tooling their fuel surcharges.

But, of course, the driver shortage once again was the primary issue challenging carriers. The CSA program alerted everyone to the need to hire safer drivers while the downsizing of the industry's driver recruiting and training infrastructure made it difficult to attract new workers into the industry.

**LM: How should shippers view the current TL market?**

**Larkin:** The current truckload market is somewhat uncertain from a shipper's perspective, and they've been anticipating capacity shortages over the past several years. However, any capacity shortages have been limited to brief periods and specific



DANIEL VASCONCELLOS

regions. If the economy continues to expand at a modest pace, capacity shortages should become more frequent and more widespread as few carriers are looking to significantly increase the size of their fleets. With more rapid economic expansion, the capacity shortage could become more severe, quickly. Those shippers that had not locked in capacity at a reasonable price might find themselves coping with skyrocketing spot market prices.

**Donald Broughton:** Shippers are going to have to improve the way they optimize the loading and unloading time or pay a significantly higher price for transportation services—tighter HOS rules and the implementation of EOBR's (electronic on-board recorders) make this inevitable. Shippers are also going to have to find a systematic way to vet the CSA score of the carriers and drivers being used, or insert a well-capitalized broker between themselves and the trucking company, or they will find themselves being named as defendants when accidents occur.

**Perry:** Both John and Donald are right on. This market is not a good one for truckload shippers, and ongoing regulatory changes are making supply chain management more complex and expensive. Capacity is tight enough to force annual cost increases above inflation. Conservative truckload management teams are becoming more aggressive about pricing; but more importantly, the combination of further economic growth and regulatory changes could push capacity utilization into the critical range, above 100 percent.

**LM:** *In late December, the FMCSA issued its final HOS rule. What is your take on this rule in terms of the impact it could have on the truckload market?*

**Larkin:** The HOS rule issued in December of 2011 was a nice compromise in my view. The FMCSA allowed carriers to retain the coveted 11-hour driving day, but inserted the 30-minute rest period into the driving day and changed the number of hours that a driver can drive during his tour of duty. The parameters around the 34-hour restart have changed to force carriers to spend two consecutive nights resting.

In theory, these changes have little impact on the short haul and regional carriers. Long-haul TL carriers, whose drivers aren't necessarily home on the weekends, will feel the bigger impact. These carriers may find their workweek effectively cut by 17 percent as the workweek would shift from six days to five days. With many longer-haul TL carriers morphing into regional or dedicated carriers and with many non-intermodal competitive long haul lanes still in existence, long-haul carriers will suffer with reduced asset productivity and additional driver recruiting challenges.

**Perry:** The final ruling roughly cuts in half the previously expected 5 percent loss in productivity. Nonetheless, the 2.5 percent to 3 percent loss implied by the changes will be enough to reduce industry capacity by the equivalent of more than 80,000 trucks. However, the fact that implementation is pushed out to 2013 makes this change coincidental with some other regulatory changes, intensifying the peak impact.

**LM:** *Continuing on the regulatory front, what is your take on CSA since it went into effect?*

**Perry:** First and foremost, CSA has had the beneficial effect of making the industry more aware of a collection of safety issues, especially with respect to maintenance. It has reduced the safety risks to shippers, but it has made the carrier selection process more complex.

**Broughton:** It narrows the list of hireable drivers, will make the driver more directly responsible for the safety of the equipment, and should make the company more directly responsible for the safety of each driver. While we are very laissez faire in our outlook and believe the biggest risk is the gold mine of data it potentially represents to the plaintiff's bar, we also believe that this is a regulatory change that should, in the end, make the highways safer for all of us.

**Larkin:** In my view, the CSA basic scores were released to the public before they were ready for prime time. The FMCSA itself has stated that the CSA scores are not intended for the use of shippers and brokers in selecting qualified carriers. Rather, the scores are intended to allow the FMCSA to more clearly identify those carriers that should receive a thorough safety audit.

It follows that shippers and carriers should not discontinue the use of a carrier until the FMCSA investigation shows that the carrier is indeed unsafe. Scores above a safety threshold or two simply may or may not indicate that a carrier is unsafe. Nonetheless, shippers and carriers are worried that, if they don't utilize the CSA scores to select their carriers, lawyers will access the CSA data and use it against them during any litigation that may occur after an accident.

**LM:** *The news regarding the driver shortage seems to be getting worse every time new data is released. In your opinion, will a shortage become the "new normal"?*

**Larkin:** Actually, the driver shortage has been around for decades and I don't see it improving any time soon. The over-the-road TL driver's job is thankless, monotonous, and tiring, and the



**“If the economy continues to expand at a modest pace, capacity shortages should become more frequent and more widespread as few carriers are looking to significantly increase the size of their fleets. “**

—John Larkin, managing director of the Stifel Nicolaus' Transportation & Logistics Research Group

core of the driver population consists of what Dan Baker calls “mossback” drivers, or those drivers in their late 40s, 50s, and early 60s. Many are overweight and in marginal health. CSA, HOS rule changes, EOBR regulations, mandatory speed limiters, new drug testing regulations, and more stringent driver health standards will only serve to exacerbate this issue.

**Perry:** It's always been normal for fleets to be slow to add capacity during an upturn—and to reduce their margin for error with each subsequent recession. What is new is that the margin for error is now small enough that a coincidental change in regulations is enough to push the market into a capacity crisis as we expect in 2013. In addition, a noticeable slowing in the markets introduction of new labor capacity—demographics and sectoral shifts—is increasing the cost and difficulty of hiring drivers.

**LM:** *Given these myriad challenges, where do you see rates and available capacity heading in 2012?*

**Larkin:** We actually don't expect capacity to grow significantly in 2012 as carriers will continue to concentrate on replacing older than normal trucks in their fleets. Many carriers will grow in non-asset intensive segments of the transportation and logistics space, and might even continue to downsize their traditional irregular route truckload operations. But not every carrier can be an intermodal operator or a truck broker. Someone will still have to buy the truck, finance the truck, recruit a driver to operate the truck, fuel the truck, maintain the truck, insure the truck, dispatch the truck, etc.

This year will likely be the first year in a number of years where the asset-based carrier will finally gain the upper hand in the pricing negotiations with shippers.

**Perry:** With that said, I see 6 per-

cent to 8 percent increases with an upside should fuel prices spike or the economy grow faster.

**Broughton:** I agree with Noel. We see the rate of demand growth continuing to exceed the rate of capacity growth into 2013. We also see the imbalance in these rates reaching a level at which per-loaded-mile pricing power could be as high as 6 percent to 9 percent for the first time in the industry's post Staggers history.

**LM:** *What do you think the truckload market will look like five years from now?*

**Broughton:** There will be fewer trucking companies and most will be more profitable. There are still a large number of fleets that are operating for unsustainably low rates of return. Especially with the regulatory headwinds, more economic profit must be produced in order to adequately reinvest in the fleet and the technology to manage the fleet.

**Larkin:** Five years from now, FedEx and/or UPS could be big players in the truckload market. They have had great success bundling LTL and package services, and it seems that a logical next step would involve a move into the full load/truckload/intermodal space. Carriers that have found a way to deal with the overwhelming numbers of FMCSA and EPA regulations while seating their trucks with qualified drivers stand to win with larger market share, premium pricing, and access to the capital markets.

**Perry:** On trend driver wages and margins will be higher, with capacity assurance the prime competitive arbiter. However, the mid-teens is likely to be a time of economic recession, so supply will be temporarily good and rates temporarily lower. □

—Jeff Berman is Group News Editor for the Supply Chain Group



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BY BRIDGET MCCREA, CONTRIBUTING EDITOR

**B**est known as the grandfather of the supply chain software space, warehouse management systems (WMS) continued their reign as one of the most important tools in a logistics professional's toolbox over the course of 2011. Despite economic problems and the fact that most companies that need a WMS probably already have one in place, the software sector continues to attract companies' attention as vendors differentiate their offerings and delivery methods.

Coming off of 2010—a year that saw worldwide WMS sales jump up by 8 percent according to ARC Advisory Group's latest market report—the sector remained on pace with above-average growth expected for 2011 as well. The 8 percent pickup came on the heels of a market contraction in 2009, according to ARC, and relatively flat sales in the prior years. Clint Reiser, ARC research analyst, attributes the growth to “a broad-based rebound in sales across geographic regions and industry verticals.”

While ARC reports that large, Tier 1 shippers and those based in North America drove much of the WMS market growth over the last two years, emerging markets are also fueling the expansion—in particular, those countries with economic growth outpacing that of developed nations. “This trend is reflected in sales of WMS solutions,” says Reiser, who expects firms in emerging markets in Asia, Latin America, and the Middle East to continue to adopt WMS to “obtain operational efficiencies in an effort to retain and improve existing cost advantages.”

In examining industry sectors where WMS is most likely to gain ground this year, Reiser expects strong demand from firms that are dealing with new compliance and traceability requirements across the supply chain. Pharmaceutical, food, and beverage companies will be particularly good candidates

for a new or upgraded WMS in 2012. “There will be a decent level of demand for WMS capabilities from these sectors,” Reiser says.

With emerging markets and specific industries in line to fuel the WMS market in 2012, *Logistics Management* spoke with top analysts in the sector to get a feel for what other trends are driving expansion and key points that shippers should keep in mind when investing or upgrading. Over the next few pages we'll explore those trends and examine what WMS vendors are doing to meet the demands of today's shippers.

### **2012: Year of the upgrade**

Many of the WMS systems that companies are using have been in place for 10 to 15 years—some even more. Technology has advanced rapidly over the last few years, making 2012 the “year of the upgrade” for WMS users that are looking for increased capabilities, expanded functionalities, software as a service (SaaS) models, and other state-of-the-art offerings.

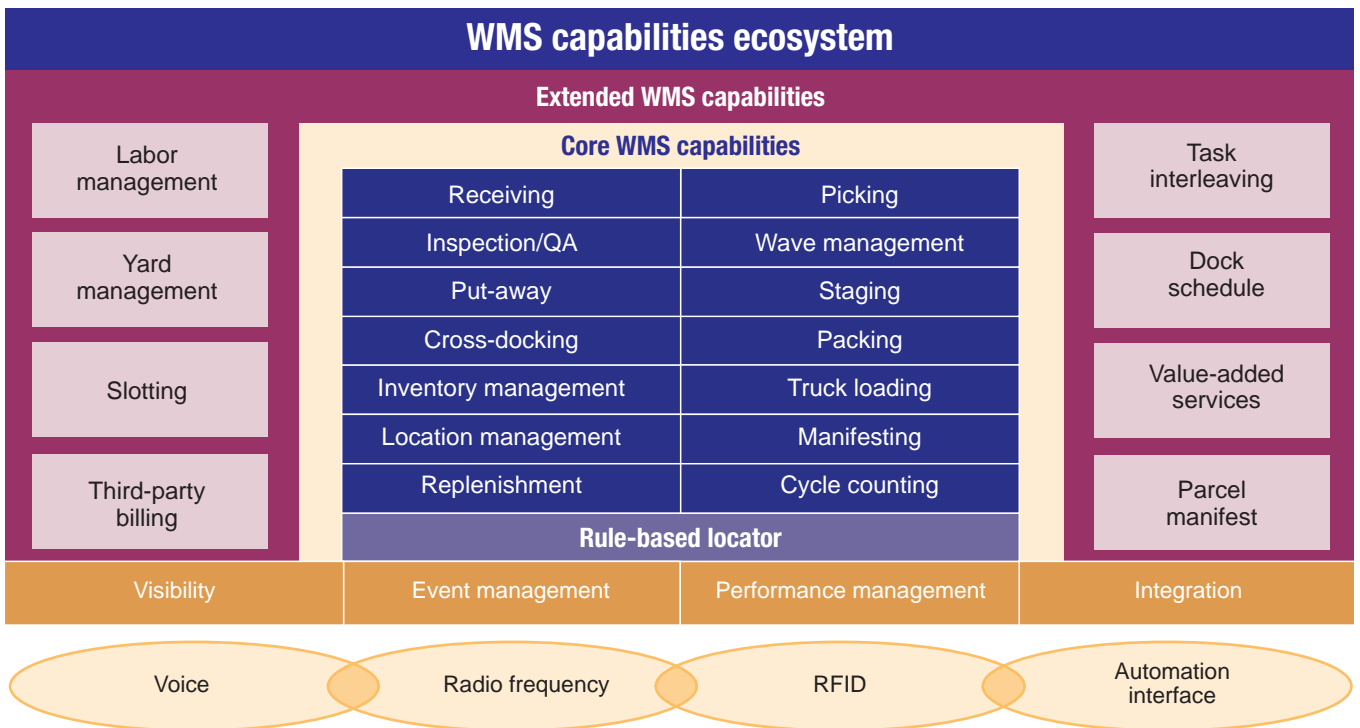
With companies expected to rekindle their capital investment activities over the next 12 months, upgrade activity will be prevalent in established WMS markets in North America and Europe, says Dwight Klappich, research vice president for Gartner, Inc. “A lot of shippers are sitting on old, heavily-customized legacy WMS applications right now,” he says.

And while vendors have migrated their systems to keep them up to date, affording and making the time for upgrades isn't always top of mind for companies. “It's not uncommon for me to run into shippers that are five or six releases behind on their WMS,” says Klappich. “They see the cost and the effort it takes to move forward as major deterrents, so they just keep using their old setups.”

Compounding the challenge are advancements within shipper business models. Ten to 15 years ago, for example,

Warehouse management systems (WMS) maintained a strong footing in the supply chain software sector in 2011. Now, emerging markets are in line to fuel further WMS growth in 2012. Our top analysts share the key trends driving expansion—and the key points that logistics professionals need to know when investing or upgrading.

# continues its reign



Source: Gartner (December 2011)    QA = Quality assurance

the majority of a retailer's business was focused on its brick-and-mortar presence. When e-commerce emerged, many hired separate third-party logistics (3PL) firms to manage their online transportation and warehouse processes.

"They segregated their inventory, basically making it inaccessible to the brick-and-mortar component," says Klappich. "As retailers bring their e-commerce activities back in-house, they need a contemporary WMS that can handle e-fulfillment and traditional activity."

To accomplish that and other warehouse-related goals, Bob Hood, senior manager of supply chain for consulting firm

**Leading WMS vendors continue to enhance and extend core capabilities as well as expand the breadth of their application footprints, now providing more value-added capabilities surrounding the core WMS.**

Capgemini, says applications that date back 10 or more years will either be replaced or brought up to speed through upgrades. "We saw this trend start in 2011, and we think it will increase in 2012, both for WMS and for transportation management systems," says Hood. "As the cost associ-

ated with maintaining old applications increases, companies will definitely be looking for alternatives.”

### Vendors answer the call

Right now, according to Hood, four key players dominate the WMS market: Oracle and SAP on the ERP side, and by best-of-breed vendors RedPrairie and Manhattan Associates. The former tends to attract companies that are already heavily invested in ERP and are in need of an integrated WMS, says Hood, while the latter lures in logistics operations that have more sophisticated requirements and that don't have to comply with corporate, ERP-related mandates.

Leading WMS vendors continue to enhance and extend their products' core capabilities while also expanding the breadth of their application by providing more value-added capabilities surrounding the core WMS, or what Klappich refers to as the “extended WMS.” He says vendors have been focused on enhancing their offerings' technical architectures, adding SaaS delivery models, and enabling more user adaptability of the WMS—a far cry from the highly customized and proprietary systems of the 1990s.

Reiser says that vendors are also adding functionalities like labor management systems, voice recognition, and warehouse analytics to their systems. “Customers are adopting these add-ons as they extend their WMS footprint to capture additional efficiencies and increase productivity in their warehouse operations,” says Reiser. “We expect strong growth rates to continue for add-ons as a collective group.”

### Driving the warehouse of the future

The WMS market is expected to continue down its growth path as vendors in the space continue to hone their offerings, and as shippers in both developed and emerging markets increasingly rely on the systems to manage their warehousing and associated activities.

Capgemini's Hood adds that global trade management (GTM) could be one area that WMS vendors see as a viable add-on, based on shipper demand and compliance issues like product traceability. “Certain features already incorporated into WMS do address global

## 5 WMS “must haves”

IF YOU'RE PLANNING TO BUY A NEW WMS OR bring an existing system into the new millennium in 2012, Dwight Klappich, research vice president for Gartner, Inc., says you should consider these points:

**1 Service-oriented architecture (SOA):** SOA continues to be a compelling topic for IT organizations considering application replacement and modernization. By definition, SOA is a set of principles and methodologies for designing and developing software in the form of interoperable services. Users should evaluate the depth of the SOA offered by the WMS vendors under consideration, as well as its abilities to deliver dynamic process composition, in addition to the SOA's capability to facilitate integration.

**2 Rich user interface:** As WMS moves beyond the warehouse operator and offers more management capabilities to decision makers and non-operators, the UI becomes increasingly important. In fact, Gartner finds notable UI capability and strategy differences across WMS vendors and products. Users should evaluate the system's ability to provide intuitive user experiences to both casual and power users.

**3 Performance management and analytics capabilities:** Vendors have offered or have

been adding analytical reporting for some time, but the new trend is to provide performance management capabilities where users can define the metrics and key performance indicators (KPIs) to monitor, as well as have them presented in multiple ways, such as via user portals and dashboards.

**4 On-premises versus SaaS:** As SaaS WMS applications have grown in functionality, and as traditional on-premises WMS providers have moved toward SaaS, the delivery method is becoming a potentially viable option worth considering. While near-term economics favor SaaS, users must continue to conduct proper due diligence to compare the pros and cons of the two deployment options.

**5 Scalability:** Users should consider the ability of the WMS to handle high-transaction volumes by talking to other vendor clients with similar volumes. They should also focus on functional capabilities that facilitate processes in high performance operations, looking at issues like “wave” picking, task interleaving, and automation support, as well as user capabilities like voice or pick to light. Users should also require vendors to provide references in similar environments to ensure that the capabilities will fit their needs.

trade requirements,” says Hood. “This could be one area that vendors pay more attention to this year.”

The small business sector is also catching the WMS vendors' eye as they look beyond the low-hanging fruit to find new customer segments. According to Reiser, small firms have historically shown limited levels of interest in and adoption of WMS due to high cost and large upfront expenditures associated with traditional software licenses.

That started changing in 2011, says Reiser, thanks to the introduction of subscription-based SaaS models. “These solutions provide smaller customers with an affordable alternative to the use of paper pick sheets,” says Reiser, “and are driving increased sales of WMS solu-

tions into the small business market.”

The usefulness of SaaS-based WMS systems expands beyond those small firms that lack capital resources for purchase-and-install implementations. In fact, Klappich sees SaaS delivery as a growth driver for the WMS market this year, noting that the offering is no longer limited to the “low end” of the marketplace. “It's interesting to see how demand for SaaS has accelerated as more robust on-demand systems have been introduced to the market,” says Klappich. “It's going to be interesting to see if this delivery method becomes a real option for larger, more complex facilities.” □

—Bridget McCrea is a Contributing Editor for Logistics Management



# ONE GOOD INVENTORY TURN DESERVES ANOTHER ... AND ANOTHER ...

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# Wet Seal's slick

With a bit of creativity, a lot of planning, and the latest in automated sortation technology, the retailer's impressive DC retrofit increased merchandise processing speed to its stores, improved accuracy to 99.5 percent, and significantly reduced transportation costs.



**Charlie Torok, Wet Seal's vice president of logistics, in the retailer's distribution center in Foothill Ranch, Calif.**

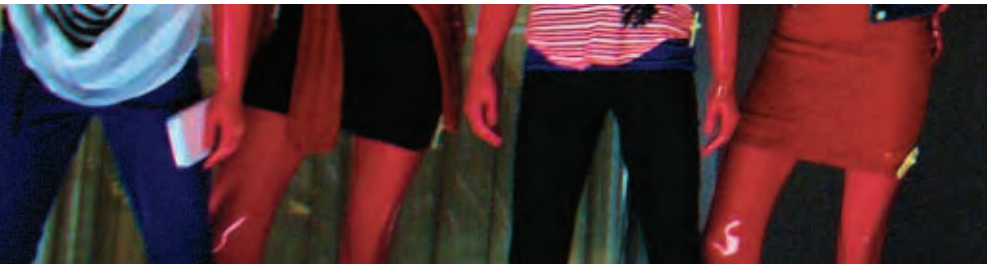
If you have a teenage daughter, you've probably heard of Wet Seal. With a customer base consisting of fashion-conscious 13-year-old to 19-year-old young women, this leading specialty retailer banks on its ability to offer the latest trends in fashion apparel and accessories at affordable prices—and the strategy is paying off.

Since its founding in 1962, Wet Seal Inc. has grown considerably. It now operates over 550 stores, including 473 Wet Seal stores and 86 Arden B stores in 47 states and Puerto Rico. While Wet Seal stores target the younger teen set, its Arden B chain provides contemporary fashion separates and accessories for women aged 25 years to 35 years. The company also offers its merchandise over the Internet in what has become a \$30-million-per-year business.

At the logistics core of the retailer's business is a 265,000-square-foot distribution center (DC) located in Foothill Ranch, Calif. In early 2010, this 10-year-old DC underwent a major transformation. An impending switch from pre-packs to unit distribution coupled with strong retail and e-commerce growth had been putting pressure on the distribution team to re-think its rather manual—and inaccurate—fulfillment system.

With a bit of creativity, a lot of planning, and the latest in automated sortation technology, it doubled its sortation capacity from 400 to 800 stores. Merchandise, which used to take 4 days to 5 days to process is now in and out of the DC in about 24 hours—all of this without adding a single square inch of space.

BY MAIDA NAPOLITANO,  
CONTRIBUTING EDITOR



# *transformation*

How did this retailer pull it off? It installed three high-speed automated unit sortation systems to support store and e-commerce fulfillment in its existing 65,000 square-foot, 17-foot clear mezzanine. This new configuration allows for significant space savings as the induction stations for the unit sorters are “stacked” on top of one another, minimizing space requirements.

And for Charlie Torok, Wet Seal’s vice president of logistics, the value of this particular DC retrofit has been incalculable. “It allowed us to remain in Southern California, which is a strategic area for our inbound product that enters Long Beach from overseas,” says Torok. “With pre-clearance and the local port being in close proximity, we can receive and turn product to ship to our stores very quickly, while consolidating smaller items with larger shipments to leverage freight costs.”

This DC retrofit has not only increased merchandise processing speed to its stores, but it has also significantly reduced operating and transportation costs. Here’s how Wet Seal made it all happen.

## **Inaccurate and slow**

Before 2010, Wet Seal’s store fulfillment process was fairly manual, supported by a carousel “put” system. Workers read “pick cards” to manually “put” pre-packs of the required quantity of products from vendor cartons to outbound store cartons placed in carriers attached to the carousel as it gradually moved by—it was slow and inefficient.

Receiving did not fare any better, as all inbound units had to be piece counted to verify receipts. Shipping was expensive because much of the freight had to be shipped to the stores via air to offset the extra two days to three days it took to process and fulfill store orders within the DC. “Our biggest problem was the lack of accuracy,” recalls Torok. “Workers would look at their pick cards and forget whether they picked it or not, so they would double pick it. At the end of the distribution, they’d say they were short when they actually may have double-shipped to a few stores.”

But the last straw was the company’s plan to shift from pre-packs to single-unit distribution in an effort to more closely replenish to actual demand patterns to each store. If done manually, this would have required a significant increase in personnel. Torok and his team knew sweeping changes needed to be made.

## **Out with the old**

In 2007, Wet Seal’s team started discussions with system integrators and vendors to see what options were available to them. Early on, they knew that an automated unit-sortation system would best fit their needs.

These systems are typically made up of individual trays that hold a unit of an item. The trays circulate over a horizontal plane and, depending on the tray mechanism, sort each unit to its proper destination. Most use a “bomb bay” tray mechanism where trays open in the middle—similar to airplane



**1. Automatic unit sorter (Sortrak) inclines up to second level inductor. 2. Workers feeding sorter trays at top level induction stations. 3. New technology allows Sortrak to move product horizontally and vertically minimizing space requirements. 4. Garments drop from the sorter tray directly into shipping carton.**

bomb bay doors—and drop each piece into outbound shipping cartons designated for a particular store.

In early 2008, after much due diligence, Wet Seal's team decided on the Sortrak, a flexible unit sortation system offered by the SDI Group USA, a California-based systems integrator. "We chose SDI because they had a split tray system," says Torok. "It basically doubles the capacity of the bomb bay drop." A unit placed on the front part of the tray can have a different destination from a unit placed on the back part of the tray. As a result, users can put one large item on both trays or two smaller items on a split tray, and it would drop with the same accuracy.

The Sortrak also had some unique properties that worked to Wet Seal's advantage, especially with the limited available space. "The typical bomb bay sorter can only go on one plane," explains Mary Adams, SDI's CEO and this project's lead manager. "With this sorter, we are able to stack them and intertwine them and get more store sort destinations within a smaller footprint."

By the fall of 2009, final plans were in place and both Wet Seal and SDI were ready to move. Mechanical installation

began in early 2010. The existing carousel system continued to operate, while the first two sorters were being installed adjacent to it. They then gradually moved one product category at a time to the new sorters before the old carousel system was completely removed to make room for yet another sorter.

Simultaneous to the mechanical install was the integration between Wet Seal's order management system and the new sortation system. IT and operations personnel went offsite for about a week and trained and tested the new system, passing real files back and forth.

Because it had to install the sorters in phases, in limited space, on a mezzanine, and with no disruptions to existing operations, SDI's Adams says the installation took about 7 months. "If it were a greenfield building we probably could have had it done in three months."

By July 2010, all three sorters were operational. "SDI was a great partner, and the system is now exceeding our expectations," says Torok.

### System in action

The majority of the product is received in standard vendor cartons on pallets. The pallets are vertically transported

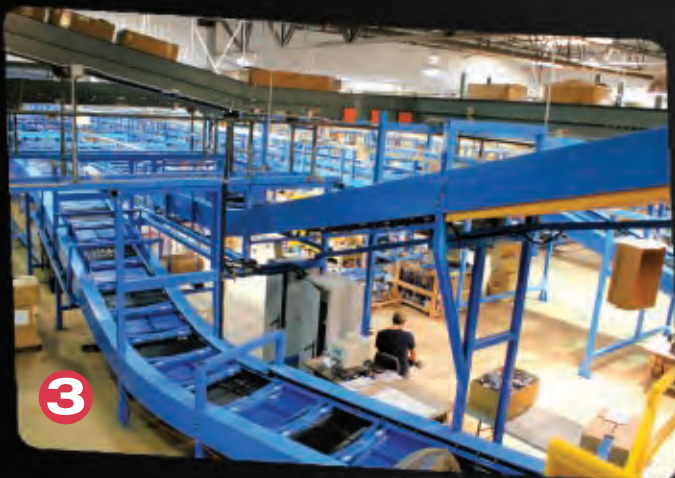
via lift truck to a pallet staging area on the mezzanine. Workers then take the cartons off the pallet onto processing lines to see if any value-added service will be required.

Cartons are then transported to one of three sorters. Each carton that comes to the sorter is SKU specific—the same SKU is in that box. At each sorter, the units can be inducted in any one of six stations. At induction, a worker scans the first SKU, opening up a demand file. The worker puts one (or two units) on each tray as it goes by until the carton is empty.

The system detects that a unit is on a tray, counts it, and transports it to the appropriate store destination where it drops the piece to a waiting outbound store carton. Once a store carton is full it's pushed to a center conveyor and travels to taper and print-and-apply stations before being conveyed and sorted to shipping lanes at the dock.

### Reaping benefits of a retrofit

With the implementation of the new system, Torok says that the benefits keep rolling in. The DC has been able to streamline both its receiving and shipping functions, while piece-count-



ing inbound merchandise has been eliminated as the system automatically counts each piece as it is inducted into the sorter.

As a result, receiving went from a two-shift to a one-shift operation. The shipping shift has also been reduced from a 16-hour to a 12-hour total shift, and labor in each of these areas has been reduced by 25 percent.

In the old system, it used to take 4 days to 5 days for product to ship out from when it hits the DC. As a result, they needed to use expensive three-day air service to get merchandise to stores on time. But because most of the orders are now turned in less than 24 hours, all outbound cartons can now be shipped UPS ground at half the cost, with the exception of California and Arizona, where regional carriers are able to provide next day service at a very low cost.

The new system is also able to track the contents in each shipping carton down to the SKU level. In the meantime, accuracy has improved from about 92 percent to over 99.5 percent. “We estimated an ROI of about 3.5 years. It’s turning into an ROI of 2.5 years,” says Torok.

Both Torok and Adams agree that

## Retrofitting advice



**Mary Adams, CEO of integrator SDI Group USA, on the pros and cons of retrofitting—or implementing a new system in an existing facility—versus opening a brand new facility:**

“In a perfect world every project would be a greenfield project where you have the luxury of designing everything from the ground up to suit a company’s growth and service needs. The reality for many established companies is very different. Scenarios vary, but in general, a move to a

new facility requires significant capital expenditure and sometimes the loss of a mature workforce. Renovations to existing operations, depending upon the current configuration and available space, can sometimes be painful but are generally worth the effort.”

### **On current retrofit trends and the economy:**

“A number of companies were looking to maximize their current infrastructure, but because of the economy, many held back for a long time. Now more companies are getting back in to optimize their system within their existing facility.”

the secret to the project’s success was planning. “Planning and having redundancy is very important when adding any new technology and process,” says Torok. “We were able to continue fulfillment with our old systems right up to the day we turned on the new sortation system.”

“Plan, then plan again,” emphasizes Adams. “Throughout the whole retrofit design process you want to anticipate where the fail points could be and plan for them.”

—Maida Napolitano is a Contributing Editor to Logistics Management

## AIR CARGO SPECIAL REPORT:

# Is 2012 the turnaround year?

While analysts say this should be a growth year for air cargo, pressing challenges such as increasing EU regulation, the pent-up demand in Asia Pacific, and the cost of global security still weigh heavy on the sector.

By Patrick Burnson, Executive Editor

**I**ndustry analysts are predicting that 2012 will be a significant year for air cargo recovery, but not without a new set of challenges that seem to be facing shippers and carriers on all hemispheric fronts.

For example, the troubled European Union (EU) is making life difficult for all airlines by imposing a unilateral carbon-trading scheme. Meanwhile, aircraft manufacturers and shippers agree that bio-fuels must be gradually introduced across the board.

The Asia Pacific, which is still the most vibrant market for U.S. shippers, may be ceding some of its influence to Latin America. Shippers say that fuel and energy costs associated with onerous environmental laws will make “near shoring” more attractive over the next year.

And don't forget the security issue that is ongoing for global shippers and carriers. However, with a more harmonized security system in place, global shippers may finally get a break on compliance expenses.

So, with a slowly improving global economy juxtaposed against this growing list of challenges, is the air cargo industry poised for a comeback? The Boeing Company certainly

thinks so. Having ended 2011 with a solid earnings report, the company says it reflects continued strong core performance across its businesses.

“Strong fourth-quarter operating performance, record revenue and backlog, and expanded earnings and cash flow capped a year of substantial progress for Boeing in 2011,” said Jim McNerney, Boeing chairman, president, and CEO. “We enter 2012 with renewed momentum, and proven business and product strategies,” he says. “With an intense focus on productivity, we're well positioned to deliver growth and increased competitiveness in the air cargo arena”

John Leahy, chief operating officer for Airbus, is equally bullish, saying that the air cargo freighter fleet alone will double in the next 20 years. “Meanwhile shippers moving freight on passenger aircraft will drive even more growth,” says Leahy. “Our Global Market Forecast foresees investment in freight-bearing aircraft exceeding \$3.5 trillion in that time frame,” he says.

Industry analysts support these rosy predictions, noting that more and more commodities are now regarded as

“perishables” and will be moved via air no matter what the cost or challenge. In fact, food, pharmaceuticals, and bio-med products are being joined by fashion and high-tech components in the just-in-time universe of global sourcing and are being packed into aircraft bellies at higher volumes.

Indeed, air transport, while still the most expensive transportation option, is now increasingly used by companies to actually save money, says Luciana Suran, an economist with global real estate consultancy CB Richard Ellis Economic Advisors. “In some cases, companies can save by flying in cargo to meet customer demand rather than spend the money warehousing their goods and distributing them throughout the U.S. and Canada,” she said. “Nike is a good example.”

So, while analysts say this should be a growth year for air cargo, pressing challenges such as increasing regulation, the pent-up demand in Asia Pacific, and global security improvements still weigh heavy on the sector. Here’s a look at those challenges and ways that both shippers and carriers can work to overcome them.

### EU’s pressure point

As if the EU didn’t have enough problems these days, it’s also earned a great deal of enmity from its air cargo trading partners as of late.

When the EU Emissions Trading Scheme (ETS) was initially introduced last year, it appeared to be an intra-European solution that would avoid uncoordinated tax measures. But the scope was extended beyond Europe’s borders and there was no let-up in taxation.

Departure taxes in the UK, Germany, and Austria—introduced as environmental measures—cost over €4 billion. At current prices for UN issued Certified Emissions Reductions, that would offset aviation’s global CO2 emissions about one-and-a-half times.

“And ETS is coming on top of that,” says Tony Tyler, director general and CEO of the International Air Transport Association (IATA). In fact, non-European governments, including the U.S., see this extra-territorial tax collection as an attack on their sovereignty. However, they are taking action.

“Aviation can ill afford to be caught in an escalating

political or trade conflict over the EU ETS,” says Tyler. “The International Civil Aviation Organization (ICAO) is the only way forward. I sense a greater appreciation in Europe that a global solution under ICAO may take time, but it will produce a superior result.” It’s more important than ever, adds Tyler, for Europe to be a fully engaged participant in discussions at ICAO aimed at delivering a global solution.

“This further isolates

### Fuel Impact on Operating Costs

Year	% of Operating Costs	Average Price per Barrel of Crude	Break-even Price per Barrel	Total Fuel Cost
2003	14%	\$28.8	\$23.4	\$44 billion
2004	17%	\$38.3	\$34.5	\$65 billion
2005	22%	\$54.5	\$51.8	\$91 billion
2006	26%	\$65.1	\$68.3	\$117 billion
2007	28%	\$73.0	\$82.2	\$135 billion
2008	33%	\$99.0	\$88.9	\$189 billion
2009	26%	\$62.0	\$55.4	\$125 billion
2010	26%	\$79.4	\$91.0	\$139 billion
2011 F	30%	\$112.0	\$116.3	\$178 billion
2012 F	32%	\$99.0	\$101.1	\$198 billion

Updated: 12/2011 Next Update: 3/2012 Source: Industry Financial Forecast Table (IATA Economics)

the EU from the rest of the world and will keep in place a unilateral scheme that is counterproductive to concerted global action on aviation and climate change,” says Charles “Chuck” Clowdis, managing director of global commerce and transport advisory services at IHS Global Insight. “The irony is that all the world’s airlines want to address climate change and make a move toward more sustainable energy.”

According to IATA, the aviation “value chain” is committed to improving fuel efficiency by an average of 1.5 percent annually to 2020, capping net emissions from 2020 with carbon-neutral growth and cutting its carbon footprint in half by 2050 compared to 2005 levels.

“Improvements in technology, operations, and infrastructure as well as the use of positive economic measures are needed to achieve this,” says Tyler.

To underscore this issue, analysts note that Air China, Boeing, and Chinese and U.S. aviation energy partners conducted China’s first sustainable bio-fuel flight late last year. The two-hour mainland flight from Beijing Capital International Airport was witnessed by officials from both countries and highlights the viability of using sustainable aviation bio-fuel sourced in China.

### Asia Pacific’s pent up demand

The fact that this new fuel demonstration took place in China should certainly not come as a surprise. Airfreight rates for Asia outbound shipments rose 4.6 percent in January over the same month a year ago, the first year-over-year increase in Drewry’s Air Freight Price Index in 15 months.

The Drewry index also jumped 8.4 percent from December, signaling that demand remained relatively solid after the late-2011 holidays as airlines kept capacity in check. The measure of 109.6 posted in December 2011 was the highest point since the Drewry index reached its 2011 high of 114 in October.



**Air China, Boeing and Chinese and U.S. aviation energy partners conducted China’s first sustainable bio-fuel flight late last year.**

And on that news, the Year of the Dragon was ushered in with forecasts for continued air cargo growth in the Asia Pacific. Airlines in the region will take delivery of more than 9,370 new aircraft over the next 20 years, according to the latest market forecast by Airbus. Valued at \$1.3 trillion, the deliveries will account for 34 percent of all new aircraft with more than 100 seats entering service worldwide over the forecast period, with the region overtaking North America and Europe as the world’s largest air transport market.

However, Washington, D.C.-based Airforwarders Association (AFA) Executive Director Brandon Fried says that while Asia remains a strong market for his constituents, other options are emerging, too.

“The industry is already seeing some softening in Asian markets where North American buyers are beginning to source products from neighboring countries,” says Fried. “This means that as time passes, more opportunities will develop throughout Latin America as well.”

### Increasing cost of security

Irrespective of regional growth, however, is the ongoing battle waged by the cargo community against global terrorism. Shippers who have been burdened by the cost of security may get little relief in the near future, say analysts.

However, IATA has urged broad cooperation among industry and governments to realize the “Checkpoint of the Future.” Given the growing quantity of freight moving in the bellies of passenger aircraft, such a move may be crucial.

“The Checkpoint of the Future envisages using passenger data collected for immigration authorities to differentiate airport screening,” says IATA’s Tyler. “Secondly, it incorporates technology expected to be available in a 10-year timeframe to enable passengers to walk through checkpoints without stopping or unpacking.”

Along with support from Interpol, the European Commission, the U.S. Department of Homeland Security, and the Chinese government, 16 states have endorsed the Checkpoint of the Future concept. The International Air Cargo Association (TIACA) endorses this view too, and is promoting its own agenda for international growth.

“We believe that countries should view air routes as highways in the sky, a competitive public road every bit as important as surface transportation infrastructure,” says TIACA’s Secretary General Daniel Fernandez. “Under a fully liberalized aviation environment, numerous new international highways in the sky are possible that would markedly improve the speed and accessibility of a nation’s businesses to their global suppliers and customers.”

In so doing, says Fernandez, the competitiveness of a nation’s businesses will increase, more foreign direct investment will be attracted and economic development promoted.

Dr. Walter Kemmsies, Moffatt & Nichol’s chief economist concurs with Fernandez, but says any discussion of “highways in the sky” means more investment in existing infrastructure. “Shippers are paying for enough logistical support as it is,” says Kemmsies. “It’s time for governments to start providing incentives for addressing fuel costs, sustainability, and security. As an American, I say the buck stops here.”

—Patrick Burnson is Executive Editor of Logistics Management

# How are we doing? See for yourself.

GLOBAL		
OPERATIONS		
KPI	TARGET	RESULT AVAILABILITY
Vessel On-Time Performance	100% Asia-U.S. West Coast 100% Asia-U.S. East Coast 100% Transatlantic 100% Asia-Europe	Quarterly Quarterly Quarterly Quarterly
SAFETY		
KPI	TARGET	RESULT AVAILABILITY
Long-Time Operational Stoppage	0	Annually
ENVIRONMENTAL		
KPI	TARGET	RESULT AVAILABILITY
Reduction of Nitrogen Oxide (NOx) Reduction of Sulfur Oxide (SOx) Reduction of CO <sub>2</sub> per TEU-Mile	↓1% ↓1% ↓1%	Annually Annually Annually

REGIONAL		
OPERATIONS		
KPI	TARGET	RESULT AVAILABILITY
In-Terminal Truck Turn Time	30 min. Jacksonville / Los Angeles / Oakland	Monthly
CUSTOMER SERVICE		
KPI	TARGET	RESULT AVAILABILITY
Lost Calls Phone Wait Time Export B/L Documentation Completion Rate	Less Than 2% Less Than 20 Seconds 98% Complete 24-hrs After Vessel ETD	Monthly Monthly Monthly
EDI		
KPI	TARGET	RESULT AVAILABILITY
Message Processing Without Failure EDI Uptime Customer Setup Time Customer Scorecard Compliance	90% 99% Within 72-hrs 95%	Every 2 Months Every 2 Months Every 2 Months Every 2 Months

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\*Global KPIs are international; regional KPIs are North American.





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## SUPPLYCHAIN MANAGEMENT REVIEW



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The 2011 rankings of the Top 25 supply chains from Gartner Inc. are in. They include repeat winners and some new entrants. Perhaps even more important than the actual rankings, says Gartner Research Director Debra Hofman, are the lessons that can be learned from analyzing the leaders. This year, six specific qualities stand out.

#### 16 The Greening of Walmart's Supply Chain...Revisited

In 2007, *SCMR* ran an article on Walmart's sustainability program, focusing on eight specific initiatives being pursued. Four years later, the author of that original article, Erica Plambeck of Stanford, and colleague Lyn Denend revisit those initiatives to assess just how Walmart is doing on the sustainability front.

#### 24 Achieving Flexibility in a Volatile World

A new global survey from PRTM confirms the importance of operational flexibility in supply chain success and identifies five levers that leaders employ to make it happen. The consultants report that the financial and performance advantages of improved flexibility can be profound. They outline five basic steps that companies can take to start realizing those benefits.

#### 32 What's Your Mobility Index?

Mobile devices are everywhere these days. But what's the real potential of mobility in the key supply chain processes. And what's the best way to identify and tap into that potential?

Sumantra Sengupta of EVM Partners says the first step in answering these questions is to carefully determine your "Mobility Index." This article tells how it's done.

#### 40 The Case for Infrastructure Investment: Lessons from Medco and Staples

Smart investment in supply chain infrastructure—and in particular automated materials handling and distribution systems—can pay big dividends. Medco and Staples have proven that convincingly, as these case studies demonstrate. Their stories point to seven key take-aways that supply chains professionals in any business sector can learn from.

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**MODEX** 2012

SOLUTIONS THAT  
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**(AM)**  
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# New show, new city, new solutions

By Supply Chain Group Staff

**Held for the first time ever, Modex 2012—the nation's newest expo for materials handling, supply chain, and logistics solutions—threw open its doors in Atlanta on February 6 at The Georgia World Congress Center. (continued)**

The event hosted more than 20,000 visitors to the trade show and educational conference, and was sponsored by the Material Handling Industry of America (MHIA).

Spread over four days, attendees found more than 586 exhibitors covering 180,000 square feet; three keynote speakers discussing all aspects of supply chain management; 70 show-floor educational seminars; and no less than 30 different educational sessions and networking events presented by 17 different co-located partners.

The Modex 2012 conference featured

leading-edge topics in manufacturing, distribution, and supply chain management, exploring subjects such as the impact of the Panama Canal expansion to sustainability, security, and visibility.

In addition to learning more about the big picture in supply chain, Modex 2012 attendees discovered new equipment solutions to streamline operations and improve visibility, maximize efficiency and flexibility, cut costs, and speed time to market.

“Participants came with very specific objectives and with buying plans in hand,” says George Prest, CEO of

MHIA. “They know that investing in the latest supply chain equipment and technology is the key to building and maintaining their competitive edge.”

According to Prest, the inaugural Modex met, and in many cases exceeded, exhibitors’ and attendees’ expectations. “Attendees were impressed with the wide range of equipment and systems solutions and education offered at Modex, and exhibitors expressed satisfaction with the quantity and quality of attendees,” he added.

## Day 1 Keynote:

# To secure future, CSCMP head says logistics industry must make its voice heard

In his show-opening keynote address, Rick Blasgen, CEO of the Council of Supply Chain Management Professionals (CSCMP), expressed optimism for the future of domestic logistics, emphasized the urgent steps that must be taken to secure that future, and hailed the materials handling industry as a key driver of the ongoing economic recovery.



**Rick Blasgen, CEO of the Council of Supply Chain Management Professionals (CSCMP)**

“The supply chain is the shock absorber managing the difference between what is planned and what actually happens,” said Blasgen. “We facilitate a lot of what happens in our economy and we don’t get a lot of credit for it. We need

to get out and tell our story.”

In his 25-year career in supply chain management, Blasgen said he has seen the discipline become not just a corporate necessity, but evolve into an essential growth vehicle for nearly every organization. According to Blasgen, logistics spending in the U.S. totaled \$1.2 trillion in 2011, constituting 8.3 percent of GDP. In 1980, logistics accounted for 17.9 percent of GDP. Blasgen credited vastly improved supply chain efficiency for the decline.

Of last year’s \$1.2 trillion, transportation costs accounted for \$768 billion, he said. It’s a highly physical business, said Blasgen, and one that is dependent on increasingly inadequate infrastructure. “The U.S. needs a national transportation policy,” he said. “That much is glaringly obvious.”

Blasgen said that the management of transportation will be a focus in 2012, followed closely by access to capacity, continuing efforts by shippers to outsource, and a gradual shift to a ‘truckers’ market.”

But most importantly, said Blasgen, is that current supply chain leaders challenge and educate the industry’s young generation. “The supply chain will be run by technically savvy people with a penchant for innovation,” said Blasgen. “If you’re new to this industry, go work on the third shift in some distribution center. It will help you immensely.”



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**Day 2 Keynote:**

**New Panama Canal enhances global connectivity**

In 2014, the Panama Canal will celebrate its centennial. It will also celebrate the opening of the expanded Panama Canal, according to Alberto Aleman Zubieta, CEO of the Panama Canal Authority and Day 2 keynote speaker

The new locks, which are currently under construction, will expand the canal's ability to handle ships nearly three times the size of current ships—an estimated 14,000 containers versus 5,000-container capacity today—and double the throughput capacity of the canal.

More importantly, said Aleman, the expanded canal and the logistics capabilities of Panama can serve as the logistics hub of the Americas. "Panama is the only port with terminals in two oceans," he said. "It is just 80 kilometers from ocean to ocean and we have more port cranes in Panama than Chile, Mexico, and Brazil."

In that sense, he added, the new canal is not so much about capacity, but connectivity. "You can use Panama as a platform to connect the Americas and the Caribbean," he said. "That is important if you want to conquer those markets and expand your supply chain and your procurement capabilities."

To take advantage of the new canal, Aleman added, the U.S. must think about investing in its transportation infrastructure, including expanded ports, new rail capacity, and improvements in our highways. For instance, only the ports in Virginia and New York can presently handle the larger ships that will come through the canal.

"What concerns me is how long it takes to do these types of projects and that they are not now being done in the U.S.," Aleman said. "You must realize that you are in a globalized economy. If you do not do it, someone else will. If you don't capture those markets, someone else will."



**Alberto Aleman Zubieta, CEO of the Panama Canal Authority**

**Day 3 Keynote:**

**Global trade awareness important to businesses of all sizes**

Donald Ratliffe, executive director of the Georgia Tech Supply Chain and Logistics Institute, illustrated the global relationships between logistics and trade at his Modex keynote address on the morning of Day 3.

Ratliffe outlined the change over the past 40 years in materials handling, from a focus within the four walls to its current impact on logistics on a larger scale. The ongoing paradigm shift, he said, is driven by the individual organization's need to understand global trade dynamics.

He presented global trade data indicating a marked trend toward regionalization over the past decade that has been driven by the relationship between capital, inventory, and time in transit. "In some cases

we've been too smart," said Ratliffe. "The focus on 'lean' has become near-zero inventory, which is alright until you have any kind of hiccup, at which point you've actually increased you risk."

And because each government throughout the world is both an essential trade partner and potential paperwork nightmare, Ratliffe emphasized the need for the public sector to become more educated about and more invested in improving the realities of logistics.

"You listen to any politician talk about logistics and it doesn't take long to realize they don't have any idea what they're talking about," said Ratliffe. "The U.S. doesn't have the government infrastructure to support export in the way that most other big exporting countries do. We've relied on the private sector to handle it."

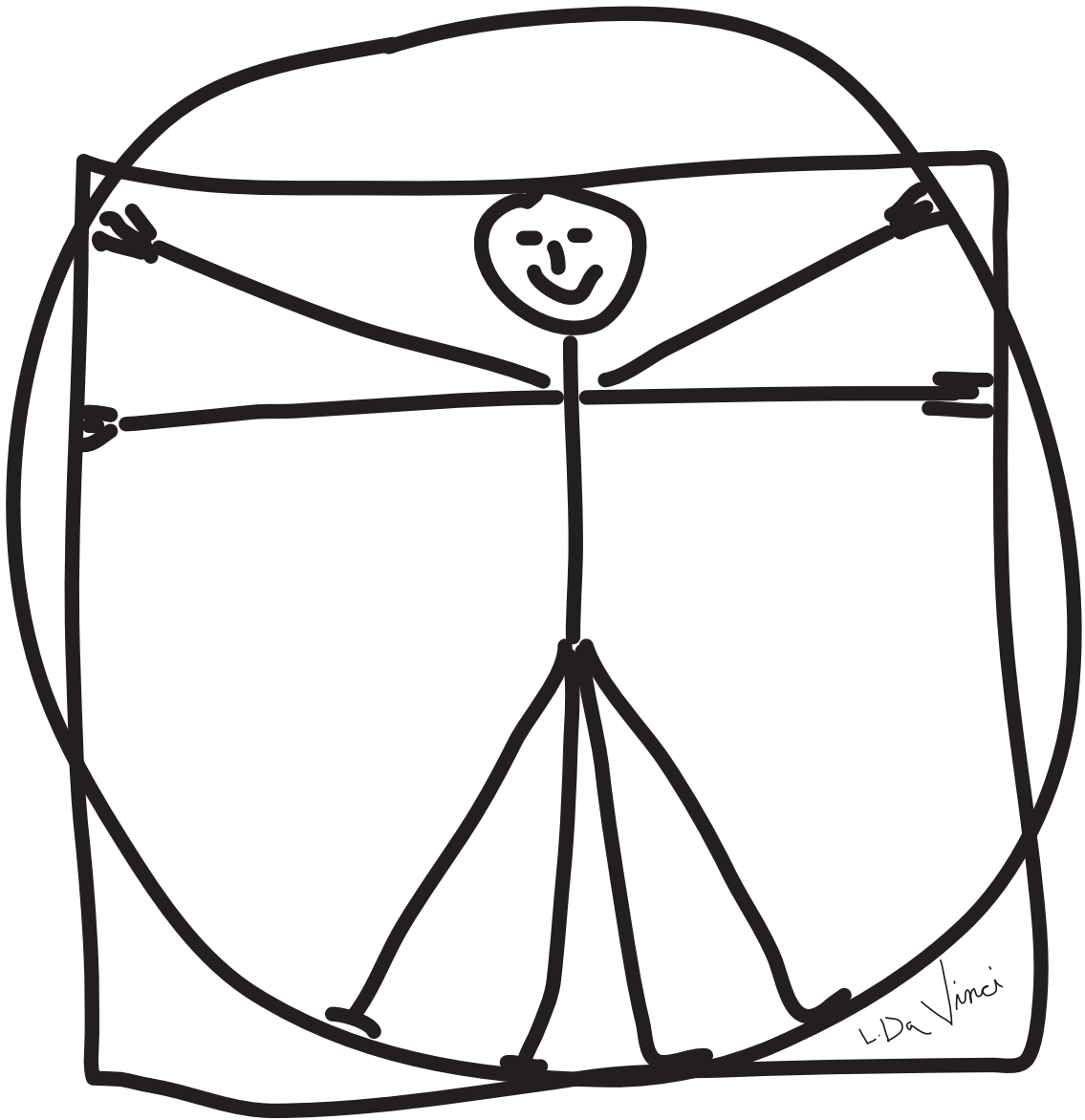
Ratliffe also echoed Alberto Alemán Zubieta, CEO of the Panama Canal Authority and Day 2 keynote presenter, in highlighting the shortcomings of U.S. port capacity. That said, he added, port capacity improvements will require additional focus upstream and downstream to avoid a conflict between bigger ships and better service.

"We've got a big built-in disadvantage that is based mostly in logistics," said Ratliffe. "We have the capability to export more stuff, but we're just not focused on doing it."



**Donald Ratliffe, executive director of the Georgia Tech Supply Chain and Logistics Institute**

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## Modex 2012 Product Highlights

### Warehouse control platform offered as complete system or by component

For control of material flow, orders, wave picking execution, and automated machine control, Intelligrated offers InControlWare warehouse control system is offered. Engineered to efficiently manage machine and operational resources, the software

increases facility capacity and lowers distribution costs through optimized workflow, equipment usage, and order fulfillment. It is scalable and may be integrated as a complete system or by individual area

component manager, including order, route, pick, carousel and crane. The user interface provides visibility into operations, orders, inventory, fulfillment and machine performance, along with extensive reporting. **Intelligrated**, [www.intelligrated.com](http://www.intelligrated.com).

### Mini-load cranes move 660-pound loads up to 78 feet

Providing an automated shelf solution for containers, boxes and trays, SSI Schaefer Systems' SMC 2 and SMC 2 XL twin-mast mini-load cranes use a closed lifting trolley to hold two standard, or one large, piece of load-carrying equipment. The machines access heights up to 39 feet or 78 feet respectively for high payloads and greater throughput. Load-carrying equipment includes combined telescopes, grippers, and pulling fixtures for containers or trays, and box and package grippers. Due to low clearance requirements, the devices optimize space and feature extremely stable

masts with very high torque resistance. New drive technology enables the transport loads up to 660 pounds due to a mast reinforcement strut—guided through a recessed groove—that prevents vibration. **SSI Schaefer Systems**, [www.ssi-schaefer.us](http://www.ssi-schaefer.us).

### Mobile, on-demand label printing/computing station ready to roll

For efficient inventory management and related tasks in warehouses, distribution centers, and manufacturing facilities, the Mobile Powered Workstation from Newcastle Systems offers on-board power to run a computer, a high-volume label printer, and other devices simultaneously, creating a fully mobile label printing/computing station. Generous shelf space provides room for products and other items. With 6-inch rubber swivel casters and no cord trailing behind, the workstation can be easily rolled and positioned for optimal productivity. The casters can be locked for stability once the workstation is in place. All models have a load capacity of 500 pounds. The unit's rechargeable battery offers integrated, seamless power for up to 12+ hours of normal use. **Newcastle Systems**, [www.newcastlesys.com](http://www.newcastlesys.com).

### Extended piece picking functionality featured

Dematic introduced extended picking functionality of its goods-to-person order fulfillment solution for piece picking, or RapidPick, on the show floor. "Last year at ProMat we introduced a one-to-one solution that allows an order selector to pick from one SKU position into one order position," said John Baysore, president and CEO of Dematic North America. "Our extended functionality allows an order selector to pick to multiple order positions." A typical configuration, he added, might be one SKU position to 6, 12, or 24 order positions. However, the modular design of the solution allows the end



user to configure the pick station with the quantity of order positions that is most productive for their application. In addition, the system now includes the ability to handle cartons of varying sizes in addition to totes. **Dematic**, [www.dematic.com/na](http://www.dematic.com/na).

### Next generation of agile, ultra reliable electric lift trucks

The next generation of agile, productive, and ultra reliable electric lift trucks where showcased on the floor. Leading the way in ergonomics and performance, Yale Materials Handling Corp.'s ERC-VA series is among the most productive and highly durable electric lift trucks on the market. New features and updates include: newly designed, industry-leading operator compartments and comfort; 16 percent more floor space; relocated multifunction displays that ensure enhanced visibility and precise pallet control; improved brake pedal layout; auto Deceleration Systems which reduce operator fatigue; and steel hoods that provide for maximum battery service access. **Yale Materials Handling Corporation**, [www.yale.com](http://www.yale.com).

### Ergonomic advances on new cost-effective trucks touted

Noting an increase in customers who prefer short-term leases, Hyster has released a line of more cost-effective IC trucks. The product lineup of versatile lift trucks reinforces the company's range of application-specific flexibility and industry-leading ship-to-shelf

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**Modex 2012 Product Highlights** *(continued)*

capabilities. "We're trying to get the right truck to the right customer," said Jonathan Dawley, president of Hyster Distribution. Hyster showcased new four-wheeled trucks with the exact same

performance and turning profiles of a three-wheeled truck. The addition of the fourth wheel disperses bumps on the travel surface for improved operator comfort. **Hyster, [www.hyster.com](http://www.hyster.com)**

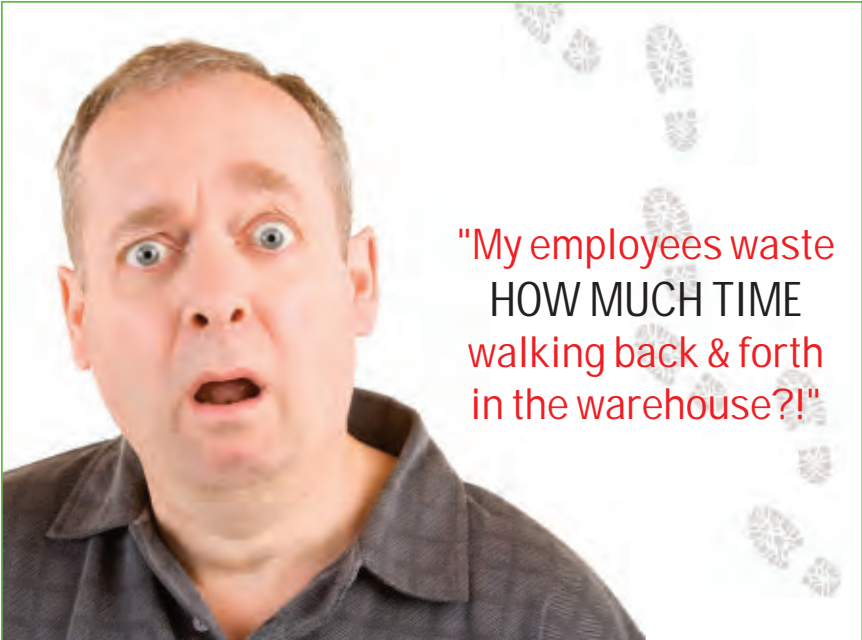


**▲ Use vertical space for storage, goods-to-person picking**

For goods-to-person picking that increases efficiency and productivity, Kardex Remstar offers its line of dynamic storage solutions includes vertical lift modules, horizontal carousels, vertical carousels, mobile shelving, and integrated software. From receiving and order processing to replenishment and cycle counting, the technologies save floor space and increase accuracy. The equipment eliminates wasted walk and search time to increase productivity up to 66 percent, while reducing floor space requirements by up to 85 percent by using vertical storage space. **Kardex Remstar, [www.kardexremstar.com](http://www.kardexremstar.com).**

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## Who's your ombudsman?

By John A. Gentle, DLP

I OFTEN RUN HOME FROM A STORE, write down the events of an interaction that I had, and then lose the note. However, in a recent case, the unsolved problem had a built-in, daily reminder. Almost every night my Droid smart phone automatically turned itself back on after I powered it off—if I could only be so lucky with the other notes I lose.

At least a month passed before I got a chance to stop at the cell phone store. The staff was very courteous, and with a minimal wait I was invited to tell my story of woe to a representative. The first thing she said was, “Do you have a troubleshooting application?” Before I could answer she looked and said, “No...too bad.” Apparently there is an “app” that monitors and analyzes end-user experience on all levels of transactions.

She looked at the phone and then told me that she had not heard about this problem. Turning to a colleague she asked him if he knew. He indicated that there was a problem with a different version, but he had not heard of my phone rebooting itself after being powered off.

She turned to me and said something to the extent that the company may know about it, but as of now there is no fix for this problem—however, it could be fixed by the time the next update is released. With that she handed me the phone and I was bid *adieu* without their recording any information about my complaint, model number, etc.

Were the manufacturer and wireless companies really aware of my problem? Was it the hardware or the software? If someone was aware, was anyone working on the problem? Would there ever be a fix? Or was my R2D2 simply under the mysterious control of the Death Star?

Here is a simple axiom: Best in class operations have a process to log and respond to all complaints and recommendations. What happens to complaints at your company? Do your carriers and third-party

logistics providers (3PLs) have a safe and effective way to report problems or sensitive personnel issues?

Progressive companies have a way to log all complaints and recommendations along with a process to respond. I like a system that has the following features:

- **Web based:** carrier or vendor accessed, company-based website
- **Confidential:** information goes directly to a process leader or ombudsman
- **Contact info:** complainant's name contact info (e-mail and phone) is captured
- **Acknowledgement:** date and time complainant sent an acknowledgement of problem
- **Name of recipient:** person who received information and will be responding
- **Problem classification:** type of problem
- **Status updates:** new, acknowledged and under investigation, or closed

Web systems that have these features have proven to attract a variety of issues—some important, some small and nagging, others confidential. People that take the time to complain are sending a message about something that is important to them, and you need to make it important to you and your team.

The fact that the system collects complaints, some being confidential, means that this system needs to be managed by an upper level manager who will also act as the team's ombudsman.

Some managers believe that there is no need for an ombudsman. I would argue to the contrary. Senior managers and companies having built programs based on integrity need to be visible, vigilant, and demanding that suppliers report any improprieties, regardless of how small.

Everyone admires companies that demand the best from each other. Make sure that everyone knows that whistle blowing is important to your logistics operation and that these messages will be dealt with by a person who is above reproach, has authority, will deal quickly and effectively, and provide an appreciative and appropriate response to the reporting party.

How do you collect and respond to issues? Who is your ombudsman? □

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