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Navigating transportation's Bermuda Triangle

Page 26

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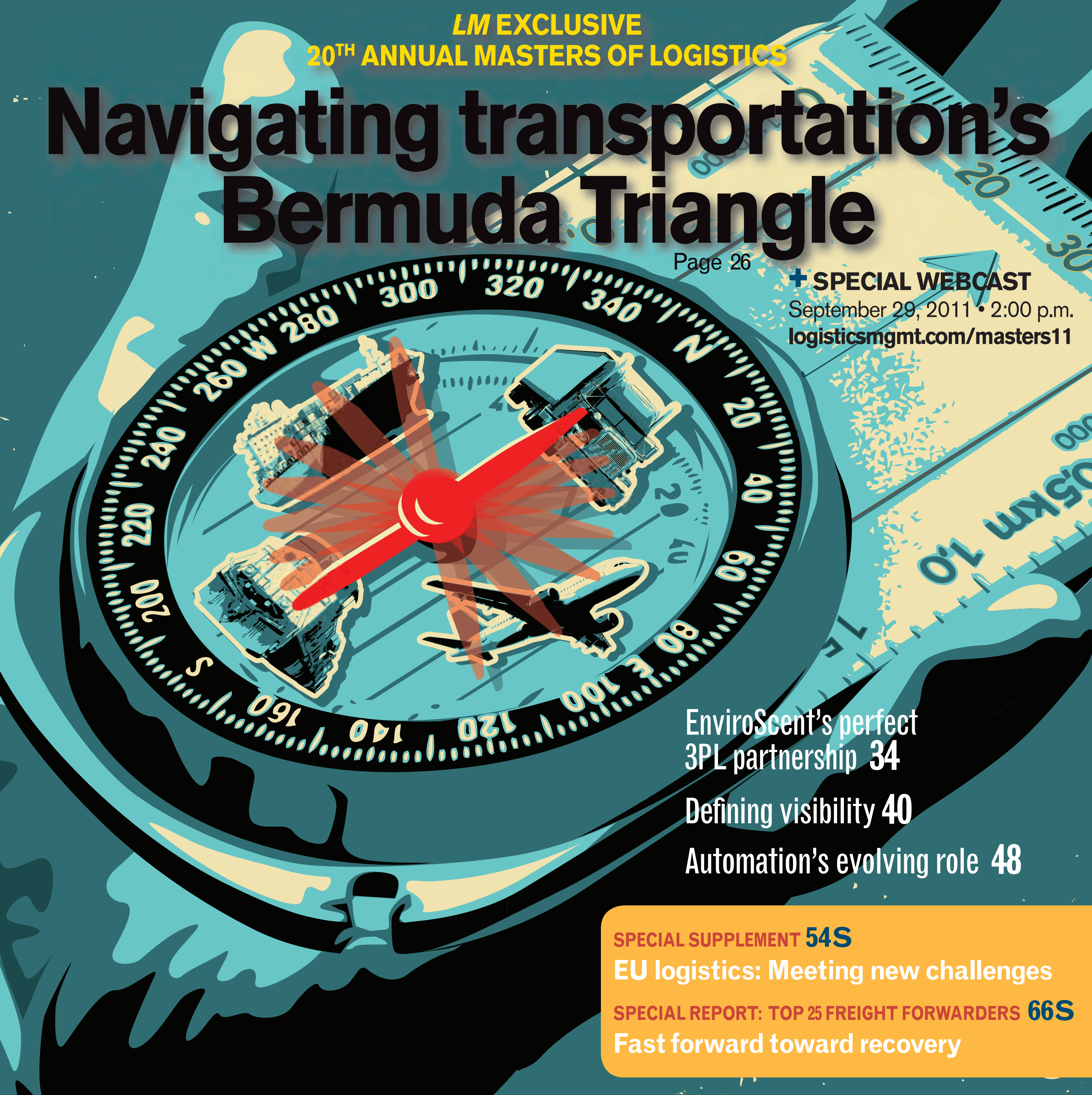

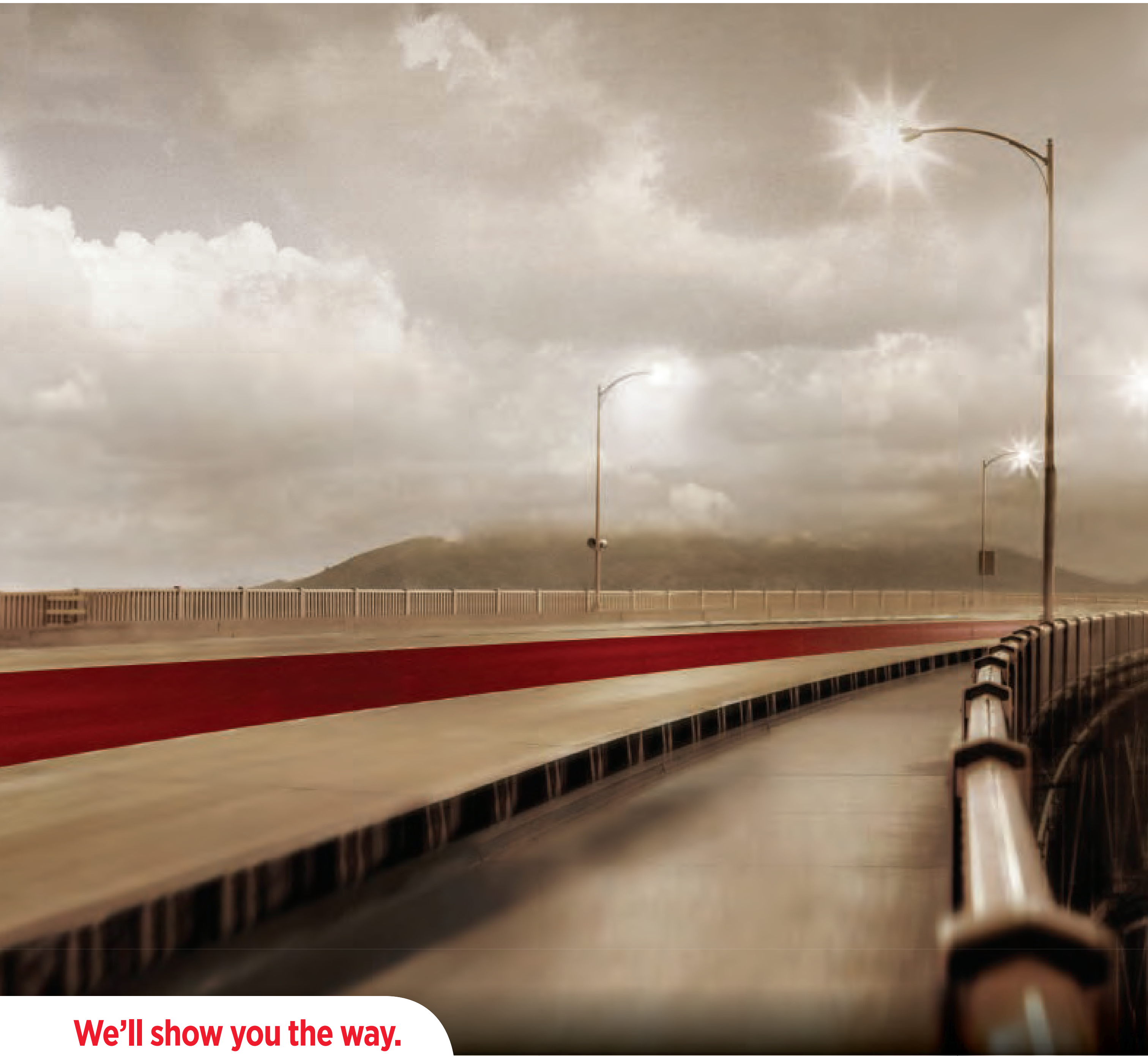

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Management UPDATE

AN EXECUTIVE SUMMARY OF INDUSTRY NEWS

Retailers remain positive. According to the monthly Global Port Tracker report released by the National Retail Federation (NRF) and Hackett Associates, import cargo volume at the nation's major retail container ports will remain below last year's levels for the remainder of the summer before seeing year-over-year gains this fall. "Cargo numbers have been down this summer, but that's a reflection of last year's unusual shipping patterns more than the economy," said Jonathan Gold, NRF VP for supply chain and customs policy. "The economy continues to face challenges, but job growth has been steady and retailers have been adding jobs themselves as sales improve. Cargo figures for this fall clearly show that retailers are expecting a healthy holiday season."

Old Dominion opens up the 'Vault.' Less-than-truckload (LTL) transportation services provider Old Dominion Freight Line (ODFL) is getting into the third-party logistics (3PL) game, announcing last month that it has rolled out Vault Logistics, its new 3PL offering. ODFL said that Vault unites several existing ODFL business units into an independent operating division comprised of warehousing, business solutions, fleet and warehouse dedicated services, and truckload brokerage units. Vault Logistics President Michael Venegoni said that the focus of Vault "is to understand its customers and engineer solutions that are customized to solve specific business challenges."

Solid logistics management pays off for Wal-Mart. While diesel prices headed north throughout most of the first half of the year, Bill Simon, president and CEO of U.S. operations at Wal-Mart, said that the company's solid transportation and logistics management helped to ease the retailers pain at the pump. Simon explained that the Wal-Mart logistics team continued to drive routing and load efficiencies to minimize the "majority of headwinds associated with rising diesel prices that impacted the price of goods."

USPS reports $3.1 billion loss. Financial struggles stemming largely from declining mail volumes and expenses related to future retiree health benefits continue to hinder the United States Postal Service (USPS). For its fiscal third quarter, the USPS has a net loss of $3.1 billion, with total mail volume falling to 39.8 billion pieces compared to 40.9 billion for the same period in 2010. Net losses for the nine months that ended June 30 amount to $5.7 billion in 2011 compared to $5.4 billion in 2010. USPS officials said that even with significant cost reductions and revenue growth initiatives, current financial projections indicate that the Postal Service will have a cash shortfall and will have reached its statutory borrowing limit by the end of the fiscal year.

California exports rise. While the U.S. economy may be languishing in inertia, California exporters racked up their 20th consecutive month of vigorous growth in June. Export shipments by California companies in June were valued at $13.83 billion, a gain of 13 percent over the $12.25 billion reported in the same month last year, according to an analysis by Beacon Economics of foreign trade data released by the U.S. Department of Commerce. "Adjusting for inflation, California's export trade has firmly returned to its pre-recession peaks," said Jock O'Connell, Beacon Economics' International Trade Adviser. "More importantly, on a seasonally-adjusted basis, California's export trade remained on an upward trajectory through the second quarter of 2011, despite the economic and financial tribulations several of our leading trading partners have been enduring," O'Connell said.

U.S. exports slump. Things were less rosy for the rest of the nation, however. President Obama's "National Export Initiative" of doubling exports by 2015 took a significant hit last month with the release of new figures by the U.S. Department of Commerce. The report showed that U.S. exports of goods and services in June 2011 decreased 2.3 percent from May 2011 to $170.9 billion. The monthly export value for U.S. consumer goods ($15 billion) was the highest on record. U.S. imports of goods and services decreased 0.8 percent over this period

continued, page 5 >>

Management UPDATE

continued

to $223.9 billion, causing the U.S. trade deficit to increase 4.4 percent since May 2011 to reach $53.1 billion in June 2011.

Gasoline tax on the rocks? The federal gasoline tax, which has not been raised since 1993 and serves as the primary funding mechanism for national highway infrastructure repairs and maintenance, is set to expire on September 30. A *New York Times* editorial said that if the tax expires and does not get an extension of any kind, "it would bankrupt the already stressed Highway Trust Fund, with devastating effects on the country's highways, bridges, mass transit systems and the economy as a whole." While various proposals have outlined ways in which the gasoline tax could be improved to increase Highway Trust Fund revenues, a *Politico* report pointed out it is a very low priority in Congress at the moment.

Shipments grow, but concerns remain. Data from Panjiva, an online search engine providing information on global suppliers and manufacturers, showed a seasonal increase in the number of U.S.-bound waterborne shipments. Panjiva saw a 5 percent gain in U.S.-bound shipments from June to July, coming in at 1,079,009. On an annual basis, July shipments were down 1.2 percent from July 2010 at 1,092,255. "The shipment numbers are pretty good although we're still facing significant headwinds," said Panjiva CEO Josh Green. "That said, it's hard to have a lot of optimism for the second half of this year; but if history is any guide, we're likely to see more seasonal increases from July to August."

UPS pumps up Next Day Air service. UPS has upgraded the number of U.S.-based locations that can receive delivery of UPS Next Day Air Early A.M. packages. The company said that this effort consisted of adding or improving coverage for roughly 1,300 ZIP codes. UPS said it now serves more ZIP codes and businesses than any of its competitors, as well as serving more ZIP codes with regular 10:30 a.m. next-day delivery service than any other carrier.

State highway projects get big boost. Department of Transportation Secretary Ray LaHood recently announced $417.3 million in grants for projects including interstate maintenance, research, innovative bridge materials, and construction methods. LaHood said these investments "will create jobs, increase mobility, improve quality of life for all Americans, and strengthen the national economy." The DOT said that the Federal Highway Administration invited states to apply in June for federal funding from 14 grant programs. There were more than 1,800 applications, totaling nearly $13 billion—more than 30 times the funds available.

Matson minimizes. In its quarterly statement to investors, Alexander & Baldwin, Inc. announced that Matson would withdraw one of its two U.S.-China ocean carrier services. "Persistently high fuel prices and overcapacity in the Transpacific trade had a significant negative impact on the performance of our two China-Long Beach services (CLX1 and CLX2), which overshadowed the company's otherwise strong second quarter performance," said Stanley M. Kuriyama, president and chief executive officer of Alexander & Baldwin, the parent company of the carrier.

Maersk rocks. In its monthly report on inbound shipments, Zepol Corp. noted that Maersk Line showed the highest number of recorded containers for the year. Zepol, a trade intelligence company, reported that U.S. import shipment volume for July, measured in twenty-foot equivalent units (TEUs), increased 2.45 percent from June but decreased 4.10 percent from July of 2010. The total number of shipments also increased 3.49 percent from June while also showing a decrease of 3 percent from July of 2010. Year to date, total TEUs are up 3.30 percent this year over last year. The Pacific, Mid-Atlantic, and South Atlantic seaports showed an increase of incoming shipments by 4.10 percent, 5.43 percent, and nearly 2 percent respectively, directly opposite of their decreases last month. Within the Pacific ports, California showed an increase of about 4 percent while Washington showed a large increase of nearly 8 percent. □

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Contents

SEPTEMBER 2011

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departments

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SPECIAL SUPPLEMENT

EU Logistics: Meeting new challenges

Freight traffic in Europe is steadily growing, and most of its ports, air carriers, and third party logistics providers are making investments in infrastructure and networks to cope with today's new challenges and increase their safety and environmental standards.. **54S**

SPECIAL REPORT: TOP 25 FREIGHT FORWARDERS

Fast forward toward recovery

While industry analysts slightly differ on who belongs on the "Top 25" list this year, all agree that the most dynamic freight forwarders are only going to get bigger and smarter as the global marketplace becomes more complex. **66S**

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Transportation's Bermuda Triangle

OVER THE PAST 20 YEARS that *Logistics Management* has been conducting its *Study of Logistics and Transportation Trends (Masters of Logistics)*, we've used our September issue to put context around the findings, draw parallels to the previous year's results, and take a closer look at how those Masters of Logistics—companies with annual sales greater than $3 billion—have ratcheted up their exemplary logistics strategies.

However, our research team was forced to take a slightly different angle in telling the tale of our 2011 findings. This year, our team noticed that the gap between how the Masters were implementing best practices and how the Contenders were running their operations had tightened so much that we felt we didn't need to go into a deep comparative analysis.

According to research team member Mary Holcomb, Ph.D., associate professor at the University of Tennessee, this was actually one bright spot in this year's report. "For example, many firms have either increased or are planning to increase collaboration with key supply and service partners…a positive sign that smaller companies are putting these important best practices to work as well."

However, the lion's share of the team's attention was absorbed by three logistics management practice areas that they believe could yield disastrous results if not addressed. In fact, they've deemed these three areas the Bermuda Triangle of logistics and transportation management.

"This Bermuda Triangle isn't geographically related," says research team member Karl Manrodt, Ph.D., professor at Georgia Southern University. "In fact, the three points that constitute our version are interconnected at the strategic level of the company."

According to Holcomb and Manrodt, the 2011 findings revealed that the Bermuda Triangle that's currently facing logistics and supply chain managers consists of (1) a lack of planning for the impact of rising fuel prices; (2) a rigid network that is incapable of flexing when uncertainty occurs; and (3) a myopic internal focus that limits the company's ability to achieve desired performance results.

The team believes that this year's data indicate that logistics managers became too "reactionary" during the recession. "They're still taking challenges one at time, managing in survival mode," says Manrodt. "And they're doing this at a time when they should be instituting new strategic plans that will effectively eliminate the clear and imminent hazards that the new economy continues to put in their path."

For example, Holcomb says that the real shocker was the answer to the question: What primary action will your company take if diesel fuel rises to $5 a gallon? The number one action is "no action." The number two action was "pass the increase along to the customer."

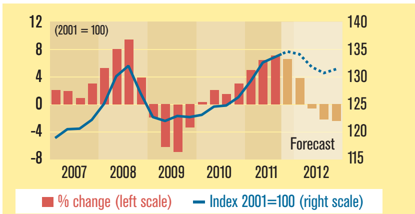
"To make matters worse," says Holcomb, "the majority of respondents don't foresee any changes to the structure of their network if diesel fuel prices rise to this level. Does it seem to you that we're in denial about the need to be proactive in this area?"

Holcomb and Manrodt take a deep dive into the three corners of their Bermuda Triangle starting on page 26. And if you have questions for our research team after you've digested the data of our *20th Annual Study of Logistics and Transportation Trends* article, make sure to tune in to our webcast on Thursday, September 29, 2011, at 2:00 p.m. ET. You can register today at **logisticsmgmt.com/masters2011**.

Michael A. Levans, Group Editorial Director

Comments? E-mail me at mlevans@ehpub.com

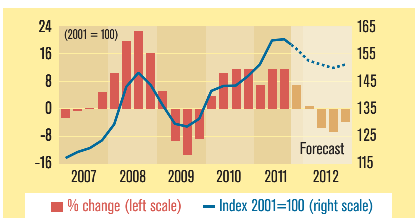
Pricing Across the Transportation Modes



% CHANGE VS.:	1 month ago	6 mos. ago	1 yr. ago
General freight - local	0.8	2.3	3.5
Truckload	-0.1	4.3	7.3
Less-than-truckload	-1.5	4.2	8.7
Tanker & other specialized freight	0.0	4.2	5.9

TRUCKING

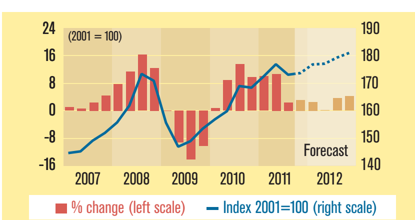
Reporting its first decline in 12 months, average transaction prices charged by all trucking companies dropped 0.2% from June to July 2011. LTL companies drove the deflationary detour with a 1.5% one-month price cut. Comparing prices to same-month-year-ago levels, however, shows trucking industry prices increased 6.5% in July. That followed price hikes of 6.7% and 6.4% in June and May, respectively. Ham-fisted fiscal policy raises the specter of double dip recession ahead. We forecast trucking price inflation will slow in the second half of this year. By the close of 2011, the LTL market will have registered a revised 7.9% average annual price increase, to be followed by a 1.6% decline in 2012.



% CHANGE VS.:	1 month ago	6 mos. ago	1 yr. ago
Scheduled air freight	-0.6	7.3	11.3
Chartered air freight & passenger	8.3	0.4	-0.3
Domestic air courier	-1.2	5.4	14.3
International air courier	-1.5	5.2	18.3

AIR

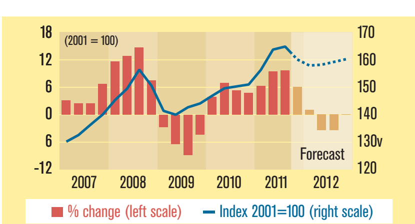
Shippers flying cargo in the belly of scheduled flights run by U.S.-owned companies caught a slight break in July as prices dipped 0.6%. Alas, that one-month cut still stranded prices 11.3% above year-ago levels. The U.S. Department of Labor's new survey of air freight on chartered (non-scheduled) flights adds more details. Here, prices ricocheted from a 9.4% one-month drop in June to an 8.3% increase in July, but still concluded 0.3% below year-ago levels. Meanwhile, domestic and international air courier prices were up a respective 14.3% and 18.3% from year ago. With limited historical data, we forecast airfreight on scheduled flights to increase 9.2% in 2011 and decline 3.7% in 2012.



% CHANGE VS.:	1 month ago	6 mos. ago	1 yr. ago
Deep-sea freight	-0.1	6.6	6.3
Coastal & intercoastal freight	0.0	0.7	1.8
Grt. Lks.-St. Lawrence Seaway	0.0	0.8	11.9
Inland water freight	0.7	9.1	14.2

WATER

The inflation pickup that we saw in U.S. waterborne freight shipping in June came to an abrupt halt in July, almost across the board. Average prices for shipping over the Great Lakes and St. Lawrence Seaway slowed from a 4.6% one-month increase in June to no change in July. At the same time, prices for deep-sea transportation shifted from positive 2.1% to negative 0.1%, and inland waterway prices slowed from 2.9% to 0.7%. Altogether, the U.S. water transportation service industry recorded a year-over-year 10.2% inflation rate in July. We forecast water transport prices to increase 6.4% in 2011 and 2.6% in 2012. If July turns out to be an anomaly, then the 2011 forecast will likely be revised upward.



% CHANGE VS.:	1 month ago	6 mos. ago	1 yr. ago
Rail freight	-0.1	7.2	9.8
Intermodal	-0.5	6.0	10.5
Carload	-0.1	7.5	9.9

RAIL

According to the Association of American Railroads, as of July 2011, intermodal rail loadings have increased for 20 straight months. Yet Labor Department surveys indicate intermodal rail service providers cut their transaction prices by 1.2% in June and cut again by 0.5% in July. Perhaps these price retreats should have been expected. After all, intermodal rail prices registered a year-over-year 8% inflation rate in July. That's the highest intermodal rail inflation rate since the 2009 recession brought deflation (falling prices) to all transportation modes. As the U.S. economy continues to exhibit much uncertainty, our forecast for rail transportation prices remains: up 7.9% in 2011 and down 1.5% in 2012.

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

inside

- Truckers, regulators surprisingly on same page on fuel standards
- Bipartisan commission calls for $200B in new infrastructure spending
- Transportation/logistics deal making activity has a strong second quarter

LM reader survey reveals realistic concern over double-dip

Nearly 80 percent of responding shippers think a double-dip recession is coming, but less than 40 percent plan to make supply chain adjustments if it does.

By Jeff Berman, Group News Editor

FRAMINGHAM, Mass.—Due to a shaky and unpredictable economic recovery, the downgrading of the United States credit rating, and subsequent swings in the stock market, it's fair to say that *Logistics Management* (*LM*) readers are concerned about the possibility of a double-dip recession rearing its ugly head.

However, if a double-dip does come to fruition, it doesn't mean that shippers will be quick to revamp their supply chain operations or logistics planning processes to a large degree—or at all.

These were takeaways from a recent *LM* readership survey that found 78 percent—or 266 of the 339 respondents—are concerned that the economy is on the verge of a double-dip recession. In a separate question, 37 percent said that they plan on making changes to their supply chain operations or logistics planning processes if it hits, with another 63 percent indicating that they have no such plans.

Political gridlock, flat demand and growth, and a stalled employment picture were prevalent in the reasons listed by respondents as to why a double-dip may be on the horizon. Other reasons included the U.S. housing market and consumer confidence as well as the fragile financial condition of many European nations.

In terms of how shippers would make changes to their supply chains, the reasons varied from things like reducing inventory, slowing down manufacturing or production operations, to simply waiting it out until things get better and the recovery shows more evidence of a sustained recovery.

"Changes we would consider include evaluating supplier capacity, improved delivery time frame particularly for international suppliers, reviewing internal procedures, earlier adherence to S&OP calendar, and an evaluation of systems we are using," said one respondent that ships sporting goods.

Other possibilities included moves such as downsizing the logistics efforts to match customer needs, cease budget planning for any supply chain software upgrades or improvements, as well as looking to cheaper Mexican carriers to replace higher cost U.S.-based carriers.

"My clients are making significant changes now," said David K. Schneider, president of DKS & Co., a Philadelphia-based logistics consultancy. "Some are moving more warehousing operations over to 3PLs to shed employees. Some are looking to major mode shift changes, but do not want to invest in the staff or skills to make and coordinate the needed changes. It's those shippers that are getting seduced by the transportation brokers for the 20 percent cost reduction—when the real return could be 50 percent if done internally."

While shippers are clearly thinking about the possibilities, there's no clear sense of panic in the form of major volume declines or job losses as a direct effect of the uneven economy, explained Brooks Bentz, a partner in Accenture's supply chain practice.

In fact, Bentz said that there are some indications that this year's peak season could be better than it was a year ago, coupled with shippers taking a renewed focus in making improvements in the area of supply chain performance.

"That is an ongoing thing, and nobody can convince me that all costs have been removed from the supply chain," said Bentz. "This is especially true now, as shippers are dealing with fuel volatility, capacity, and demand fluctuation."

Stifel Nicolaus analyst David Ross noted in a research report that annual tonnage and volume growth comparisons are tougher and industry growth is minimal, with little evidence of things falling despite the high level of economic uncertainty.

Taking that a step further, Ross explained that retailers are maintaining low inventories and being cautious in the current environment, with no signs of inventory destocking that needs to take place—which he said is good for trucking volume stability.

"Any abatement of current fears should lead to a nice pickup in demand, in our opinion, as there is no housing bubble left to pop; no auto bubble left to pop; fuel prices have been declining which is a decent tailwind for consumer spending; unemployment is relatively stable; borrowing rates are expected to remain low; and the population is growing," wrote Ross. "That's why our fear of a recession is less than others." □

ENERGY

Truckers, regulators surprisingly on same page on fuel standards

WASHINGTON, D.C.—The August announcement that the Obama administration was seeking a 20 percent increase in heavy truck fuel efficiency standards was not surprising. After all, in May 2010, the President had requested that the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) develop such standards, which will be phased in during the 2014-2018 model years.

What was surprising was the level of cooperation from trucking executives, lobbyists, and truck manufacturers on the issue. Usually, any costly industry

regulation—and this one is expected to add about $6,200 to the cost of a $125,000 Class 8 tractor—is met with resistance if not outright disdain from officials. Not this time.

President Obama's request that the trucking industry start to become more efficient—to 6.5 miles per gallon (mpg) from today's 5 mpg average for a typical loaded semi-trailer—was actually praised by industry leaders and their chief lobbyist.

American Trucking Associations President and CEO Bill Graves called it "welcome news for the trucking industry." FedEx Corp. CEO Fred Smith said in a statement that the new regulations were "a win for the transportation industry, for the environment, and for all Americans." And Con-way Inc. President Douglas Stotlar labeled it "an important milestone for our industry and our country."

What's behind the industry love-fest? First, trucking officials were pleased that, early on, they were invited into the regulatory process for input. Secondly, there is money to be made—and saved—from the new rules. And third, unlike some regulations coming out of Washington, these actually make sense.

"This regulation and the process used to establish it are a model for how government and business should work together to meet energy, environment, and economic goals," said Tim Solso, chairman and CEO of Cummins, a major truck engine manufacturer.

Navistar Chairman, President and CEO Daniel Ustian echoed that by saying that with this rule, the Environmental Protection Agency (EPA) and NHTSA have set a standard that could be used worldwide to meet fuel efficiency and greenhouse gas emissions standards.

"We have worked closely and productively with the EPA and NHTSA and look forward to continued collaboration on implementation of the new standards," said Sean Waters, director of compliance and regulatory affairs for Daimler Trucks North America.

Commercial trucks used about 22

billion gallons of diesel last year, and account for about 20 percent of all transportation's fuel use. The trucking industry is expected to spend a record $150 billion this year on fuel costs—a typical fill-up on a 200-gallon Class 8 tractor can run as much as $800.

And shippers are paying this tab, whether they realize it or not. Fuel surcharges are running as high as 40 percent for truckload and about 20 percent to 22 percent for less-than-truckload freight, as diesel costs hover around the $4 per gallon level.

—John D. Schulz, Contributing Editor

RECOVERY

Bipartisan commission calls for $200B in infrastructure spending

WASHINGTON, D.C.—A new study backed by an impressive array of former and current government officials is urging greater spending on infrastructure at a time when Washington seems gridlocked over highway spending.

The new study, entitled "*Falling Apart and Falling Behind*," details the economic challenges caused by America's aging infrastructure and calls for a series of policy recommendations in crafting new, innovative transportation policies.

Declaring "it's time for America to wake up and invest in its future," former Pennsylvania Gov. Ed Rendell says the current focus on the debt crisis should have no bearing on Washington's ability to rebuild.

Immediately, the new study calls for $200 billion annually in infrastructure spending—mostly from loans from a new infrastructure bank, new interstate tolls, and private capital—but with only about $18 billion coming from the general U.S. Treasury. That's about the amount generated from the federal fuel tax and other fees.

"America is falling apart, make no mistake about it," said Rendell, who added that there was a $2.2 billion shortfall in funding infrastructure currently. "We are falling behind in every way and need a long-term infrastructure strategy to get us back to par."

How bad is it? In Pennsylvania alone, so many bridges are in disrepair that it would take $8.7 billion for needed repairs, according to Penn DOT. Its budget this year for such repairs is a paltry $600 million; and in turn, Pennsylvania is seriously considering closing bridges because of lack of funding, according to its deputy DOT secretary for administration Scott Christie.

Greater infrastructure spending would be great for the economy, Ren-

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dell said. He estimated that for every $1 billion in infrastructure, 25,000 jobs are created.

"Falling Apart and Falling Behind" also provides a comparative look at the smart investments being made by international economic competitors and suggests a series of recommendations for crafting new innovative transportation policies in the United States that will spur economic growth.

Rendell said the time has come for the U.S. to commit to a long-term infrastructure revitalization plan that invests at least $200 billion a year.

—John D. Schulz, Contributing Editor

MERGERS & ACQUISITIONS

Transportation/logistics deal making activity strong

NEW YORK—At the end of the first quarter, Pricewaterhouse Coopers (PwC) said that transportation and logistics merger and acquisition activity was picking up steam. That thesis seems to have gained momentum based on the data in the firm's quarterly report, *Intersections: Second Quarter 2011 global transportation and logistics industry mergers and acquisitions analysis.*

For the second quarter, PwC reported that second quarter deal value was $13.5 billion compared to $18.4 billion for the same period in 2010 and is up about 30 percent from the first quarter's $10.4 billion in total deal value.

There were 47 deals valued at $50 million or more in the second quarter, which represents six more deals than the second quarter of 2010, while average deal value at $300 million—for deals at $50 million or more—down from $400 million a year ago. And of these 47 deals, only nine involved U.S.-based targets or acquirers.

Deals cited by PwC in the *Intersections* report represent all announced deals for the quarter—as opposed to completed deals only—and the report does not parse out deals that are withdrawn, intended, or pending.

PwC noted in the report that deal activity picked up in the second quarter due in large part to the return of "mega deals" in the quarter, which have a disclosed value higher than $1 billion such as the $3.69 billion acquisition of Continental Airlines by UAL Corp, the parent company of United Airlines.

"We have seen and continue to see a gradual improvement in deal activity going back to the low point in 2009, when deal activity was very much diminished by the financial crisis," said PwC U.S. Transportation and Logistics Sector Leader Ken Evans in an interview. "Now, financing is much more available and strong companies have rebuilt their liquidity and are very interested in growth by acquisition where it makes sense."

—Jeff Berman, Group News Editor

Predictive Analytics: Looking forward to better supply chain decisions

PREDICTIVE ANALYTICS—using quantitative methods to derive forward-looking insights from data—could be the right prescription for companies that are serious about supply chain excellence.

Why? Because with predictive analytics, supply chain managers gain a deeper understanding of what is happening upstream and downstream. As a result, they're better able to assess the operational impacts of prospective supply chain decisions.

Another reason is that less than 10 percent of companies currently use advanced analytics in supply chain management. That could mean serious competitive advantages for organizations that move quickly to harness the power of predictive analytics.

With predictive analytics, supply chain managers gain a deeper understanding of what is happening upstream and downstream.

Incidentally, most companies (the other 90 percent) use analytics primarily as a descriptive tool—a way to look backward at historical data and answer rudimentary questions such as what happened? Why did it happen? And how much did it hurt or benefit the organization? Predictive analytics also leverages descriptive analytics, but it adds sophisticated statistical modeling, forecasting, and optimization to predict potential business outcomes. Consider the following ways that companies have been leveraging predictive analytics.

ENHANCING DEMAND PLANNING

Among other things, predictive analytics supports supply chain planning by increasing forecast accuracy, gauging the effectiveness of multi-echelon inventory approaches, and improving customer service. Consider the case of a global office products company looking to correct collaboration problems involving upstream sales and marketing operations. The solution was enhanced demand planning and S&OP capabilities supported by predictive analytics. A new integrated planning organization is now up and running, supported by added in-house analytics savvy and statistical tools and models.

OPTIMIZING INVENTORY

To reduce costs, stock-outs, and obsolescence rates, a global retailer recently launched an inventory optimization initiative. The company began by installing a new inventory management system, but it needed advanced analytics to determine the new application's operating parameters.

Focusing on a representative sample of SKU/store combinations, the company used inventory management principles and regression analysis to develop a simulation model and analyze supply/demand uncertainties, product characteristics, and other operational and financial factors. Results were extrapolated across all SKU/store combinations, with optimized values fed into the inventory management application. Margin improvements of $110 million are expected over the next three years.

RATIONALIZING STORE INVENTORIES AND SHELF SPACE

A U.S. supermarket chain needed to reduce store inventories. However, the company had no formal mechanism for assessing ongoing movement of store inventory or tracking store-level closing/opening inventories. It also was not good at calculating optimal shelf inventory levels, so overstocked shelves and, consequently, idle working capital were common.

The solution was to develop a "perpetual inventory-tracking model." This tool combines and analyzes data from various sources and then calculates optimal inventory levels for each store, identifies excess shelf inventory, and offers detailed shelf-management suggestions. Near-term inventory improvements of more than $7

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million resulted, along with $13 million in projected annual long-term benefits.

RAISING MANUFACTURING EFFECTIVENESS

An international oil and natural gas services company set out to reduce costs, cut lead times, increase scalability, and realign its supply chains with growth markets. Using insights gained from predictive analytics, the company was able to shift supplies to more cost-effective manufacturing and sourcing locations; raise accountability for cost, delivery, and supply chain performance; improve planning and inventory management; and reduce its North American supply chain footprint. Annual savings of $100 million to $140 million are expected.

REDUCING COST TO SERVE

Operational flexibility is a growing priority among global companies, and one of the most prevalent examples is being able to rapidly change suppliers or alter manufacturing capacities and locations. To make this happen, it's critical to have accurate, up-to-date, cost-to-serve information.

Take the case of a large agribusiness concern seeking to assess supply chain improvement opportunities. Advanced analytics helped the company identify the root causes of performance problems, gauge forecasting effectiveness, and do cost-to-serve comparisons. Advanced forecast-optimization methods, multi-echelon inventory-optimization techniques, and detailed tradeoff analyses then were used to make credible decisions about reducing cost-to-serve. Results included a 20 percent reduction in inventory and working capital, an average 13 percent reduction in transportation and distribution costs, and an 8 percent overall drop in cost of goods sold.

However the bridge connecting all these opportunities is more—and more useful—information, and that is where analytics comes in. Among supply chain masters, an increasingly core mission will be developing enterprise-wide predictive analytics capabilities that provide more and better insights, along with increased potential to make well-informed business decisions. ☐

TransPac: Significant shortage of container capacity is looming

INTERNATIONAL TRADE IS A WILD and wooly place these days, and it's likely to be even more so in the Transpacific (TransPac) this fall. In fact, the level of uncertainty has rarely—if ever—been higher.

After the recent recessionary drop and the first volume decline since the advent of containerization, up to 500 container ships were on layup. The box owners, both liner companies and leasing firms, used this lull to retire, scrap, not replace or otherwise prune the global box fleet by approximately 3 million units.

Now shippers face an unprecedented challenge. The ocean carrier industry took about a $60 billion hit to its revenue in the recession, yet it was only able to take out about $40 billion in costs. One of the very successful cost reduction steps they took involved migrating to slow and super-slow steaming.

To achieve this, the carriers took standard vessel speeds from 28 - 30 knots down to 15 - 18 knots, and with super-slow steaming, down to 8 -10 knots. These lengthened cycle times required more vessels to serve each string, putting most of the idle assets back to work. It also resulted in much longer cycle times for boxes, creating need for about 5 percent more boxes to maintain present service levels.

With demand increasing, a significant shortage of container capacity is looming. Under normal operating circumstances, carriers aim for a slot ratio of about 3.0 to 1.0 (boxes per slot). In 2010, this dropped to 2.03 to 1.0, and the 2011 projection is 1.99, according to the World Shipping Council.

Another benchmark signal is the load ratio (loaded TEUs for each box in the fleet), and that has historically been about 4.5. That number jumped to 5.08 in 2003, and has consistently stayed above 5.0 ever since. While better utilization is a good thing, once it gets above about 5.5, significant shortages appear. According to the World Shipping Council, this could possibly rise above 5.54 during this year's peak.

In fact, the National Retail Federation has reported that this year's peak shipping season could be significantly better than last year, with increases of 10 percent or more commencing in September. And, a recent *Logistics Management (LM)* article reported that the inventory-to-sales ratio (the percentage of inventories a company has on hand to support the current amount of sales) is low, and an uptick in consumer demand could increase flows and imports.

LM also recently highlighted the impact of the inventory-to-sales ratio, when gauging current and projected volume growth, stating: "The ratio right now is pretty low, which means that one of the reasons shipment volume is somewhat down is that retailers and wholesalers are running on low levels of stock. What that means is any uptick in consumer demand will be affected in an increase of flows and imports because there is not enough stock available to meet that demand. As a result, we will see the normal seasonal pickup coming at a more normal or traditional time, rather than coming early like it did last year."

Currently, the Port Tracker report is calling for June volume to come in at 1.31 million TEU for a 0.08 percent annual decrease. July is expected to reach 1.36 million TEU for a 1.3 percent decrease, and August is projected to hit 1.43 million TEU for a 0.6 percent increase, with increases to continue through November.

In fact, September is expected to hit 1.47 million TEU—a 10 percent annual increase—and an 18 percent gain is expected in October, followed by a 19 percent gain in November.

If the container shortage materializes, the pressure to shorten cycle time will increase significantly. That's likely to lead to more trans-loading at the West Coast ports.

NOT A RECENT DEVELOPMENT

However, the current container shortage didn't happen overnight. In fact, it's been evolving over the past three years.

In late 2008 and throughout 2009 container manufacturing came to an almost complete halt as ocean carriers and leasing companies stopped buying 'new builds' as a result of the global economic recession. Furthermore, fleet retirements increased greatly in this period as disposition thresholds were reduced to minimize potential depot storage.

Historically, manufacturers produce about 6 mil-

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lion TEUs annually, but in 2009 to 2010 they produced less than 3 million, with an expectation of about 3.5 million this year—at an all-time high price of $3,000 per box.

Faced with an excess of vessel 'new building' deliveries, along with spiking fuel prices, ocean carriers introduced "slow steaming." In this way, the industry accommodated a shrinking container fleet and higher asset demand caused by decreased system velocity, until the sudden upturn in 2010 volumes which caught all parties shorthanded. The

Planning now and locking up capacity in advance will help avoid stock outs and service problems when crunch time comes.

Chinese container manufacturers have increased production, although full fleet recovery is not expected until 2012 at the earliest.

Forecasting future activity has also been hindered as manufacturers and carriers worked to determine the impact of the earthquake in Japan. Some analysts believe that 2 percent to 3 percent of the entire world's container fleet may have been destroyed or damaged.

If the container shortage materializes, the pressure to shorten cycle time will increase significantly. That's likely to lead to more trans-loading at the West Coast ports so that the boxes can be returned more quickly to the Asia-Pacific region. Consequently, intense pressure will be placed on trans-loader capacity, while shippers will be wrestling for slots to move freight into domestic cans and trailers for inland moves.

So, this is a cautionary tale about what may be over the near-term horizon. Planning now and locking up capacity in advance will help avoid stock outs and service problems when crunch time comes. However, occurrences like this are not uni-dimensional.

A spike in trans-loading to amp up turn times can also present a set of challenges for inland exporters searching for box capacity. A few forces are at work here:

- The cost of repositioning empties, from where they alight as a result of their import moves to where they are needed for export, is rising.
- Along with the general shortage looming just over the horizon, the increasing reluctance of a number of ocean carriers to allow boxes deep into the North American interior exacerbates the competition for container capacity.
- A distinct dissipation of export management skills among shippers has occurred as a result of the long-term declining demand that occurred when the dollar was stronger.

The more recent rise in exports has caught many without the requisite functional knowledge to operate effectively and efficiently. So, look for this peak season to be an interesting ride. ☐

***LM* EXCLUSIVE**

20th Annual Study of Logistics and Transportation Trends (*Masters of Logistics*)

Navigating transportation's Bermuda Triangle

Our annual study identifies three specific areas of logistics and transportation management that could yield disastrous results if not addressed. In 2011, those who accept the status quo may not be heard from for years to come.

BY **MARY C. HOLCOMB,** PH.D., ASSOCIATE PROFESSOR, UNIVERSITY OF TENNESSEE;
KARL B. MANRODT, PH.D., PROFESSOR, GEORGIA SOUTHERN UNIVERSITY

Although you won't find it on any official map, seafarers claim the Bermuda Triangle as a place where ships, planes, and people have disappeared under circumstances beyond the explanation of ordinary man. Further investigation, however, has revealed that many of these mysterious cases involved inaccurate reporting or the exaggeration of the facts.

The results of our *20th Annual Study of Logistics and Transportation Trends (Masters of Logistics)* suggests that logisticians now have their own Bermuda Triangle, one which, if left unattended, has the potential to create disastrous and inexplicable outcomes.

For the past two and a half years, companies have been simply reacting to what some economists and financial experts are calling the "new normal." The hallmark of this new business environment is a sluggish economy that is forecasted to grow at an annual rate of just under 2 percent. To exacerbate matters, the new normal also has unpredictable and volatile change at both the demand and supply ends of the supply chain.

With this in mind, it's now imperative that logistics and supply chain professionals learn how to navigate the waters of this strange new sea in order to help their companies survive and grow. To do this, they must institute new strategic plans and take actions that will effectively eliminate the clear and imminent hazards that the new normal has created.

Our Bermuda Triangle isn't geographically related; in fact, the three points that constitute our version are interconnected at the strategic level of the enterprise. The Bermuda Triangle facing logistics and supply chain managers consists of (1) a lack of planning for the impact of rising fuel prices; (2) a rigid network that is incapable of flexing when uncertainty occurs; and (3) a myopic internal focus that limits the enterprises' ability to achieve the desired performance results.

DATA SAYS...

For the past 20 years, this study has identified emerging trends in the field of logistics and has provided benchmarking data on transportation performance and expenditures. This year, the research project was conducted by Georgia Southern University and the University of Tennessee in partnership with Con-way Inc., Ernst & Young, and *Logistics Management*.

We had 764 domestic and global logistics, transportation,

Daniel Hertzberg

and supply chain professionals participate in this year's study, accounting for an estimated $18.6 billion in transportation expenditures and over $15.7 billion in international transportation. The Masters of Logistics—companies with annual sales greater than $3 billion—represented 17.7 percent of the study participants. Medium sized firms, between $500 million and $3 billion in annual revenue, accounted for 27.5 percent of respondents. The majority of respondents (54.8 percent) are smaller firms with reported annual revenue less than $500 million.

Respondent companies represent more than 14 industry sectors ranging from pharmaceuticals to food. Since the beginning of the study, the core group of participants has been in the manufacturing sector—this year that group represents 37.6 percent of the total. Consumer products companies represent the largest sub-sector of that group at 11.5 percent. The next largest sector taking part in this year's study is energy, chemical, and mining, accounting for 9.8 percent of all participants.

A key indicator for the state of transportation is transportation-spend as a percent of sales—and this trend over time has been an interesting one. From 2004 through 2007 North American domestic transportation spend as a percent of sales increased every year. In 2008 as the economy began to show signs of weakening, the percentage of firms spending more than 5 percent of sales on domestic transportation dropped significantly from 2007.

Spending increased again in 2009 and continued to rise in 2010 with some 22.6 percent of firms reporting that they spent more than 5 percent of sales on domestic transportation. This percentage dropped to 21.2 percent for 2011. Results show that the most significant change in domestic transportation spending as a percent of sales has occurred in the middle range. That is, firms that spent 1 percent to 2 percent of sales on domestic transportation last year (2010) are now spending 2 percent to 3 percent of sales on this activity. The same is true for those firms that spent 3 percent to 4 percent last year on sales—they are now spending 4 percent to 5 percent of sales on domestic transportation.

Further analysis of domestic transportation-spend as a percentage of sales by size of firm shows that the majority (57.4 percent) of small firms spend less than 3 percent of sales on this activity. This is compared to medium firms that spend more than 4 percent on average while the Masters' domestic transportation-spend is 3 percent to 4 percent of sales on average.

International transportation spending as a percent of sales is also related to size of firm. In 2011, the majority (49.4 percent) of small size firms are spending less than 1 percent of sales for this service. Medium size firms spend on average 3 percent to 4 percent of sales on international transportation, while the Masters spend an average of 4 percent to 5 percent globally.

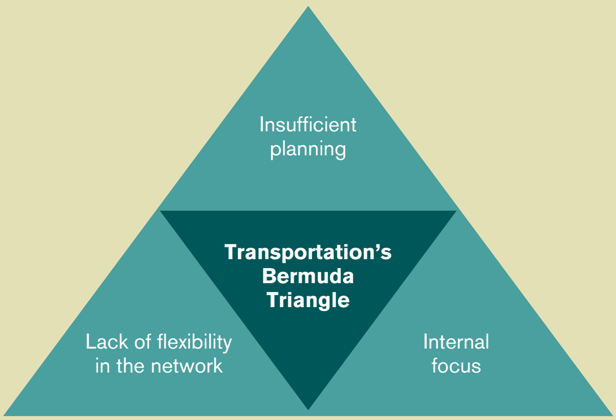
AREA 1: LACK OF PLANNING

How are firms trying to tack against a current of rising transportation costs? The data from this year's annual study suggests that "tried and true" approaches are being used.

We asked study respondents about the level of maturity for a variety of actions and initiatives aimed at improving operating efficiency. The top five most mature actions are: (1) the use of core carriers; (2) the use of dedicated transportation; (3) carrier tracking; (4) load planning; and (5) shipment consolidation.

Perhaps even more revealing is that more than half of the 22 actions and initiatives presented to participants had been completed for several years. Three other actions or initiatives that are poised to assist in keeping transportation costs in line include the use of new transportation technology; the

The three trouble areas of the "triangle"



Source: *2011 Masters of Logistics Study*

use of 'green' carriers such as Smartway; and freight balancing or pooled distribution.

Interestingly, the use of intermodal shipments and sharing capacity forecasts with carriers or other service providers are the top two actions currently in the planning stages.

The analysis showed that there is no predominant action or project that is being used or planned to improve transportation efficiency. Instead it has been a combination of various fundamental approaches that has kept transportation costs in check or led to opportunities for short-term incremental savings.

According to Tony Ross, Ernst & Young's senior manager of advisory services: "This suggests that innovation in transportation management is sorely needed in order to achieve breakthrough efficiency gains." In fact, one of the designated points of our Bermuda Triangle is the lack of planning for the impact of rising fuel prices on operations.

When asked what primary action the company (or business unit) would take to offset the accompanying rise in transportation costs, the leading response was "no actions are currently planned." This was followed—in rank order—by "increases will be passed along to the customer," "improved load planning," and "improved route planning." The first two options will be unacceptable to management at the "C" level who will expect a response that will deliver results. The latter two actions, improved load and route planning, are execution oriented. While this level of action will produce results, it can be a short-term, sub-optimal approach.

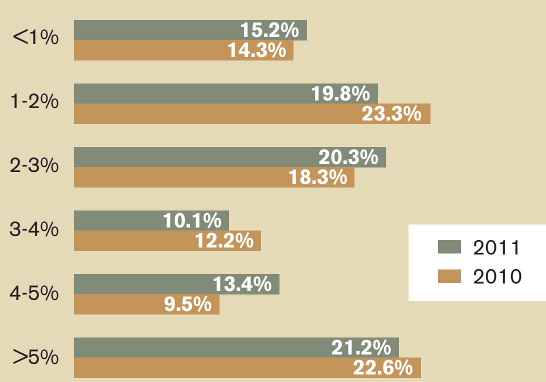
Improved route planning tied with network optimization/redesign is a way to offset a rise in transportation costs. It's at this strategic level that a long-term, "best line of attack" can be formulated to avoid what appears to be unexplained mishaps in the Triangle. "Moreover, using an optimization tool will allow the company to gain an understanding of how sensitive the network will be to future increases or changes in other costs such as duties/tariffs, commodity prices, or demand and supply shifts," adds Ross.

Surprisingly, when asked what changes would happen to the supply chain network if diesel fuel rose to $5 a gallon, an alarming 47.9 percent of the study participants reported that their network would not change. Balancing this, an almost equal proportion indicated that some to moderate changes would be made to the network.

Data show that 27.9 percent of the study participants review their network design on an annual basis. However, it's imperative that the results of these reviews be translated into

Transportation spend as a percent of sales

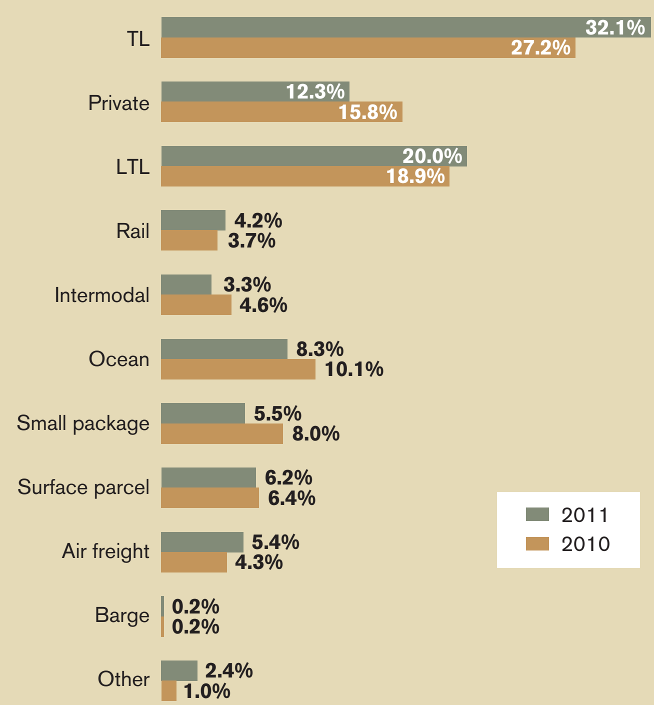
(Percentage of respondents)



Source: *2011 Masters of Logistics Study*

Allocating freight dollars

(Percentage of transportation budget)



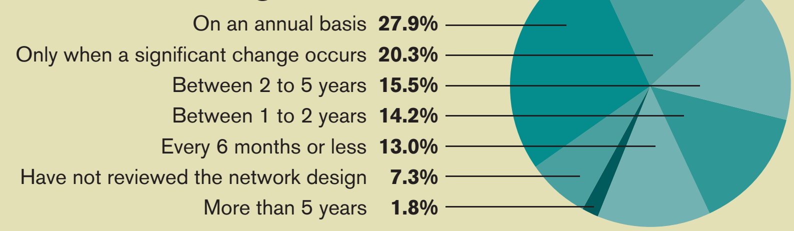
Source: *2011 Masters of Logistics Study*


Sacramento
Carson City
Oakland
Merced
Flagstaff
Prescott

tactics and then operational actions. The data also suggest that these links are currently not as strong as needed. Furthermore, 20.3 percent of the study respondents reported that they only review their network design when there's a significant change, such as a merger, acquisition, or divestiture.

We suggest that this timing leaves a tremendous amount of opportunity on the table, and it potentially enables competitors to close or increase their competitive advantage if they are reviewing their network design more frequently.

Frequency of review for network design



Source: *2011 Masters of Logistics Study*

AREA 2: INFLEXIBLE NETWORK

At an operational level, cost-to-serve and energy (fuel) prices affect transportation choices. It's not surprising therefore that supply chains use truckload (TL) as the principal mode for moving freight.

The data for 2011 indicate that TL's share of the transportation budget increased to 32.1 percent as compared to 27.2 percent for 2010. This increase was the largest modal gain for 2011. LTL accounted for 20.0 percent of the transportation budget in 2011, representing the second largest modal expenditure for the firm—a 5.8 percent increase in share of the budget as compared to 2010. In fact, combined TL and LTL capture the vast majority of freight expenditures; and for 2011, this is 52.1 percent of total transportation spend.

In 2010, the combined total was 46.1 percent of transportation spend and 53.9 percent in 2009. These percentages do not compare to 2008, however, when TL and LTL commanded 64 percent of the total transportation budget primarily due to LTL's 28.0 percent share of the total budget—the highest percentage reported since the inception of the annual study.

The increase in the percentage of the budget for TL in 2011 resulted primarily due to less of the budget being allocated to the private fleet. This could be the result of a shift away from the use of private fleets, or, more likely, based on the fact that costs in the private fleet didn't increase as quickly as the other modes. This mode still remains a viable transportation option for many firms, commanding 12.3 percent of the budget in 2011—a 22.1 percent decline from 2010 levels and approximates the percent expenditure in 2009 for this mode.

Private fleets were not the only mode that saw less of the transportation budget in 2011. Small package carriers, ocean, and intermodal all reported a smaller share of the transportation budget in 2011 as compared to the previous year. In addition to increases in TL and LTL, the percentage of the transportation budget allocated to airfreight also grew from 4.3 percent to 5.4 percent from 2010 to 2011. It's interesting to note that transportation spend for intermodal continues to decline from its high in 2009 at 5.4 percent of the budget.

While there are changes in the allocation of the transportation budget across the various modes from year to year, the ranking of the modes by percentage of the budget hasn't changed since this study began in 1991.

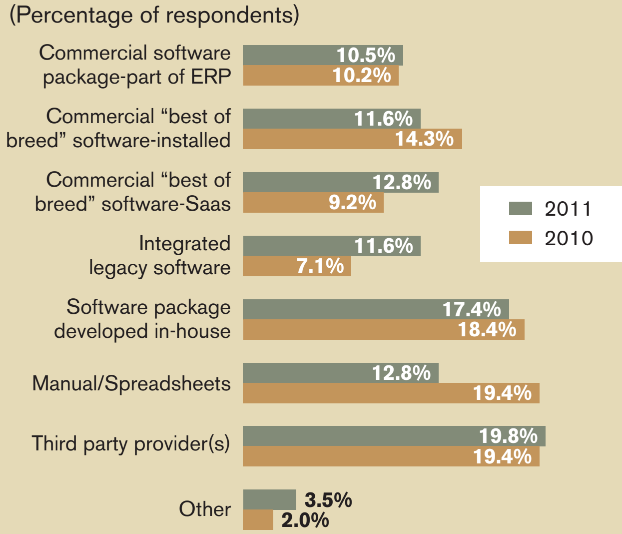
Truckload, LTL, and private fleets command the largest share of the freight budget in North America. On average, these three modes account for around 60 percent of the total budget. Data from this year's study show that selecting a transportation mode is based on three key factors: freight costs, lead or transit time requirements, and reliability.

"Transportation plays a lead role in the firm's pursuit to improve supply chain flexibility," says Con-way's Tom Nightingale, vice president of communications and chief marketing officer. The study data indicate that the top initiatives completed to date to improve supply chain flexibility include the use of multiple transportation modes to meet delivery schedules, the use of freight brokers for shipping needs, and the increased use of multiple transportation modes to meet delivery schedules.

"These actions are tactical and operational," says Nightingale. "While they can be part of a larger plan to improve supply chain flexibility, they are not sufficient in and of themselves to achieve this goal."

Moving to more sophisticated tools to manage transportation

(Percentage of respondents)

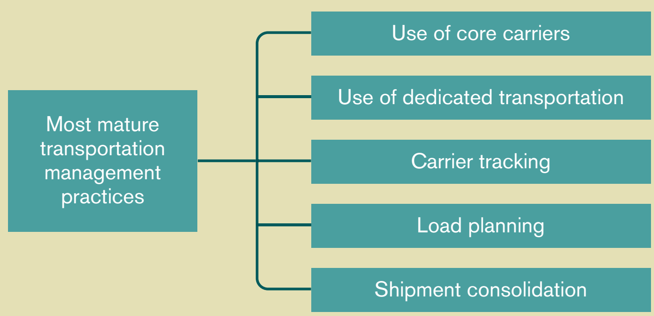


Source: *2011 Masters of Logistics Study*

Where should shippers spend their time to make sure they're navigating away from this corner of the triangle? The data show that many of the actions that have the capability to improve supply chain flexibility are in the planning stage.

They include reducing supply and order-fulfillment lead time; improving integration of information systems with external customers and suppliers; and increasing collaboration with key suppliers. "It's critical that these actions move from the planning stage to implementation as soon as possible given the current ability of the firm to deal with uncertainty that is ever-present in the supply chain," adds Tony Ross.

Shippers reinventing "old" practices



Source: *2011 Masters of Logistics Study*

AREA 3: INTERNAL FOCUS

Determining how to increase supply chain flexibility and optimally plan for future impacts to the network is challenging for any logistics manager. The task is even more difficult due to the triangle's third corner.

The study results indicate that there remains a meaningful planning gap between the firm and its key customers and suppliers. This gap results in a myopic, internal focus that limits the degree to which the firm engages its key supply chain partners in strategic initiatives such as sales and operations planning (S&OP) and company-wide inventory reduction initiatives.

The data show that only 7.5 percent of key suppliers and 6.3 percent of key customers are highly involved in the S&OP process. Yet collaborative forecasting/demand planning is cited as the primary method being used by the firm to reduce company-wide inventory levels. The expected benefits from the inventory reduction initiative are targeted for 5 percent to 15 percent on average.

Engaging suppliers and customers in supply chain initiatives, especially at the planning stage, has the potential of improving everyone's efficiency and effectiveness. The bright spot on the horizon is that many study participants reported that they are currently implementing increased collaboration with key customers and suppliers.

"The benefit of the information sharing has been noted in transportation, where nearly 30 percent of the survey respondents are already sharing capacity forecasts with their carriers," says Nightingale. "This helps us keep our costs—and of course our rates—more competitive."

TAKING THE MYSTERY OUT OF THE BERMUDA TRIANGLE

Many of the catastrophes and losses within the geographic Bermuda Triangle can be attributed to faulty or missing data, lack of proper training, and human error. We would be wise to warn logistics professionals that these factors yield the same effect when considering our logistics and transportation Bermuda Triangle.

For example, successful transportation moves are heavily dependent on utilizing the right tools in the right way. As freight transportation has become more complex due to the global nature of the supply chain, more sophisticated methods for strategic, tactical, and operational decision making are needed.

Over the years of conducting this study, our growing concern has been that a large percentage of companies have used and continue to use manual/spreadsheets and software developed in house to manage transportation. In 2009, 24.6 percent of study participants reported that they used manual techniques or spreadsheets for domestic transportation management.

This percentage dropped to 19.4 percent in 2010, and the data for 2011 indicate that only 12.8 percent of companies rely on this method. The data indicate that there has been a move away from less sophisticated tools and techniques to commercially purchased "best of breed" Software-as-a-Service (SaaS) solutions that integrate legacy systems, spreadsheets, email, and Web-based portals through a non-intrusive software platform.

The percentage of respondents using software developed in house has not changed significantly over the past few years. Currently 17.4 percent of companies use this approach to manage domestic transportation.

One hurdle of using manual methods, spreadsheets, and software developed in house is that they make it very difficult to achieve the level of visibility that's needed for a seamless flow of data and information in a supply chain. Highly visible data and information increases the likelihood for more optimal decision making.

Avoiding the logistics and transportation Bermuda Triangle isn't that difficult—it means separating folklore from reality. Successful navigation requires planning in advance of potential hazards and working with partners to maximize current efforts.

Last, but not least, it involves future thinking in order to plot a course toward innovation. Those who accept the status quo may not be heard from in the years to come. ☐

—Mary Collins Holcomb, Ph.D., and Karl B. Manrodt, Ph.D. are frequent contributors to Logistics Management

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EnviroScent concentrates on

By continually working to expand its 3PL relationship, this fast-growing manufacturer has been able to concentrate on the bigger picture—expanding into new markets, launching new products, gaining efficiencies in its operations, and reducing manufacturing and labor costs.

BY **JOHN D. SCHULZ**, CONTRIBUTING EDITOR

STRENGTHS

Sometimes the key to a successful enterprise is realizing one's strengths—and weaknesses. Just ask Nick McKay, chief executive officer of EnviroScent, a fast-growing, Atlanta-based marketer of home fragrance products. In fact, McKay now oversees an enterprise that expanded revenue by 400 percent last year and is on pace for similar growth over the course of 2011.

However, according to McKay, meteoric growth for this unique company was not always a sure bet. Three years ago, a big-box retailer wanted to increase its business with EnviroScent in a major way. That's usually a good thing; however, McKay quickly realized that his company couldn't provide the manufacturing, production, and distribution of its products in-house—with a staff of 20 employees in Atlanta—that could match the level of the retailer's demands.

McKay says that in the past the choice was always to be the best developer of home fragrances and, at the same time, be the best manufacturer of their own products—but the growth was making this double-duty too overwhelming.

"With any company, you can do anything, but you can't do everything," says McKay. "It was at that point when we made the strategic decision to focus on certain things that we're good at doing. For everything else we decided to choose to partner with companies that are best-in-class in functional areas where we simply couldn't be world class."

EnviroScent made the decision to focus on its own core business and leverage the strengths of a third-party logistics provider (3PL), Saddle Creek Corp., in packaging, distribution, transportation, and logistics. According to McKay, Saddle Creek also went beyond traditional 3PL services to provide contract-manufacturing capabilities.

According to EnviroScent's Nick McKay, Saddle Creek went beyond traditional 3PL services to provide contract manufacturing capabilities, all of which are based in the provider's 1+ million-square-foot facility in Atlanta.

By expanding its 3PL relationship, EnviroScent has been able to concentrate on the bigger picture—expanding into new markets as it launched new products, gaining efficiencies in its operations, and reducing manufacturing and labor costs.

And the results have been nothing less than spectacular. Privately held EnviroScent doesn't release profitability, however McKay says his company is in the black, growing revenue four times year-over-year, while concentrating its expertise on development of new innovations to make inroads in the $7 billion North American home fragrance market.

GROWING PAINS

EnviroScent is a classic American start-up story. In 2001, Jeff Sherwood, a former NASA primate zoologist and self-described "serial entrepreneur," and his wife Sharon, decided the world could smell a little better. They began a start-up company providing fragrance-based solutions.

Among its products are ScentStems, a new bouquet enhancer product; ScentSicles that bring trees, wreaths, and garland to life with the authentic smell of fresh-cut Douglas fir, white pine, and blue spruce; and ScentSticks, that freshen homes and are infused with pure fragrance oil for longevity. EnviroScent's products have been featured in national events such as the Rockefeller Center Tree Lighting and other seasonal celebrations.

But a couple years ago, because of the seasonality of some of its products, EnviroScent was nearly overwhelmed by demand from a major retailer. At that time, it realized it had to engage a 3PL to take some of the manufacturing load off its hands. In the spring of 2010, it conducted interviews with about a dozen 3PLs before settling on Saddle Creek.

"The market place doesn't have a pure play manufacturer and 3PL under one roof, so we evaluated the companies' ability to stretch their expertise," says McKay, adding that he believed Saddle Creek had competencies around process, ISO compliance particularly in co-packing, and the ability to expand those competencies into manufacturing.

"We saw an emerging opportunity for them to be a turnkey supply chain manager for companies like ours," says McKay. And by the time EnviroScent engaged Saddle Creek in mid-May 2010, the scent-maker had a highly seasonal business keyed to the fall and Christmas holiday season.

"We live by three tenets as we serve our retail partners—on time, error-free, and complete," McKay says. "Quality and zero defects are must-haves as well. Our focus was to deliver those three objectives throughout the season."

And how has the 3PL relationship delivered? Over the past three years since the start, McKay says flatly: "We've had zero missed deadlines, zero missed orders, zero errors."

FINE TUNING THE 3PL PARTNERSHIP

After Saddle Creek took over in mid-May 2010, it relocated what had been EnviroScent's manufacturing operation to a Saddle Creek-operated facility in Atlanta. It began shipping products from that location in mid-July, just before the peak.

The first order of business was the refinement of EnviroScent's supply chain. Saddle Creek was introduced to the company's vendors to allow an optimization of manufacturing process. And as peak production season was getting under way, EnviroScent moved its manufacturing operations. It then worked with Saddle Creek to identify and implement Lean process improvements necessary to meet the aggressive 90-day target for new manufacturing processes under its 3PL.

According to McKay, the 3PL provided a comprehensive solution, including material sourcing, light manufacturing, order fulfillment, warehousing, and distribution. With these integrated capabilities, the 3PL met EnviroScent's exacting specifications—which finally allowed the company to focus on its core competency.

Scott Trahan, general manager of Saddle Creek's Atlanta operations, says his company's core businesses are warehousing, transportation, and packaging. But because EnviroScent's proposal was so well thought-out and analytical, it allowed Saddle Creek to expand in non-traditional areas, such as manufacturing.

"It was a little bit of natural progression into the manufacturing side," says Trahan. "But there was a short-term and long-term plan."

The biggest hurdle, Trahan explains, was getting used to EnviroScent's operations. Accustomed to dealing with larger organizations, Saddle Creek had to adjust to a smaller, very entrepreneurial company. "We had to work with them on rapidly changing requirements and directions," he says. "A lot of products were new. There were lots of changes in material procurement, and we had to be very quick and responsive."

In 2011, EnviroScent's business is not nearly as seasonally oriented as it was just last year when its products were geared to the holiday season. With Saddle Creek's assistance, it has evened out demand over 12 months and it has launched new products not geared to the holidays. "And we make sure they are manufactured at competitive prices," McKay says.

Asked if he was surprised by his 3PL's efficiencies, McKay responded: "We have high expectations of ourselves and our partners, and we're not often surprised. I'd say we were clearly pleased with the performance, and it validated the process we undertook to find the right partner."

According to McKay, a strong emphasis on processes and communications were the keys to making it work. There are standing weekly meetings on site with Saddle Creek personnel where new product development

Going green while still smelling sweet

EnviroScent's successful 3PL partnership has allowed it to focus on three major corporate goals:

1. Development of distinct fragrances that are authentic, pure, and inspired by the best of nature.
2. Innovation based on deep consumer insights, enabling it to offer truly unique products that no other company in the industry can offer.
3. Take a greener approach to home fragrance.

Through its supply chain, the company has been able to source as local as possible to ensure that all packaging, shipping, and display materials are recyclable, placing it in a unique category in the industry. That environmental stewardship is extremely important to EnviroScent CEO Nick McKay.

"Our core products are from natural biodegradable fibers sources from sustainability resources and infused with pure fragrances—locally, if possible," McKay says. "Our packaging and shipping materials are recyclable from cradle to grave."

McKay calls his environmental approach "exceptionally different" from his competitors. "In fact, it's a key point of differentiation for us. We believe it's right. Each fragrance is a unique animal and poses different challenges from a packaging point of view. The easiest road is virgin nonrecyclable plastic. But to find a solution that honors the environment required an incredible amount of research and development to get it right."

EnviroScent's supply chain is 95 percent U.S.-based, and it has chosen vendors, wherever possible, who are local to the Atlanta area, or within a short driving distance. "This reduces our freight considerably, which has obvious environmental benefits," McKay says.

efforts are discussed in detail.

"There has to be proper visibility well before decisions are made in order for products to be optimized for manufacturing," he says. "Our discussions rarely center on what we're delivering this week, although that's a must-have with any supply chain partner. Instead, our discussions are often on research and development and management of products in our pipeline."

McKay's advice to potential outsourcers of manufacturing and distribution is to make sure "you are placing a square peg in a square hole." He recommends thinking three to five years ahead, identifying what challenges are down the road. "It's not just product and manufacturing, but the core values have to be right from the first day," he says. "Otherwise it's destined to fail."

MUTUAL BENEFITS ABOUND

McKay says that the Saddle Creek arrangement works because of both companies' core values. "Both have long-term visions for success, with short-term goals to guide them there. Both are well-financed operations. Both have very detail-focused employees who very good thinkers and experts at what they do," says McKay.

It has allowed EnviroScent to keep manufacturing products onshore and remain one of the few "Made-in-USA" companies in its field. According to McKay, its 3PL partner not only helped EnviroScent meet its critical customer deadline, but it provided creative ideas for saving money, streamlining processes, and improving distribution along the way.

For example, through the outsourcing of manufacturing to the control of the 3PL, EnviroScent was able to reduce its labor requirements by 20 to 30 percent. This success has prompted EnviroScent to partner with Saddle Creek for other processes, including design and product development.

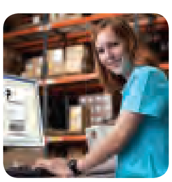
For Saddle Creek, the biggest benefit has been the ability to market itself to other customers seeking manufacturing help. Or as Trahan puts it: "We get the 'wow' factor with potential customers saying, 'I didn't realize you guys were able to do this.'"

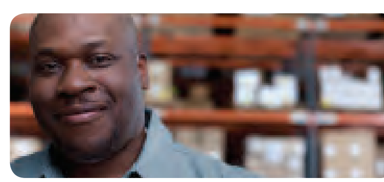
For McKay, his goals are clearly set on "continued excellence." Specifically, he says he's looking for scalability improvements, continually improving processes, and the ability to deliver better performance against key metrics.

The company wants to continue producing products in the U.S. and bring process improvements to begin marketing products globally. "Speed is our currency in the world we play in," McKay says. "When an opportunity presents itself, we evaluate and deploy resources against it. We want to deliver great products and we have a supply chain that can run alongside that." ☐

John D. Schulz is a Contributing Editor to Logistics Management

Can your shipping software handle the unexpected?





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Defining vis´i·bil´i·ty

The nebulous term gets thrown around quite a bit in logistics and supply chain circles, but what does it mean? How is it achieved? And what benefit does it bring to your operations?

BY **BRIDGET McCREA**, CONTRIBUTING EDITOR

For logistics and supply chain managers, the concept of "visibility" should be pretty clear cut: Ideally, it's when shippers, business partners, and customers know exactly where products are at any point in the supply chain—from the raw materials supplier to the final destination.

Made easier through the use of technology, supply chain visibility works best when quality data is gathered from both the supply side (where the goods are coming from) and the demand side (sales, returns, customer buying trends) of the equation. Once the data is collected—most often through the use of supply chain software—it's then analyzed and used for accurate forecasting, planning, and production.

Visibility comes into play across many supply chain scenarios, whether they're localized or global in nature. The company whose supply chain extends across various continents, for example, can find its transportation modes literally halted overnight by events like erupting volcanoes, tsunamis, and political unrest. Through accurate visibility, that company can quickly tell how its shipments will be affected and adjust accordingly. Without that "window" into its transportation operations, the company would be left to guess as to when—if ever—the goods would make it to the U.S.

"With solid visibility made possible by technology, that company could query all of its shipments by bill of lading number to figure out which shipments are already in transit, and which are sitting in port," explains Shanton Wilcox, a principal in Capgemini's supply chain management practice. "That gives the company a starting point and puts it in a much better position to deal with the catastrophic scenario."

When executed properly, supply chain visibility will also come into play on a day-to-day basis. For example, shippers can obtain information about finished goods availability (What's in the pipeline right now? What goods are in transit? Which shipments cleared customs?) from trading partners, and then use that data to ensure that customer demand is being met, and not exceeded. "When you achieve good supply chain visibility," says Wilcox, "you gain consistent control over your operations and processes."

Over the next few pages we'll help shippers better define what visibility is, explain how it can be achieved through technology and good tracking processes, and then see what visibility looks like in action.

WHAT'S ALL THE FUSS?

Shippers trying to wrap their arms around visibility should start by taking a step back to look at how the concept originated.

"In 2000, everyone was looking for the next, great supply chain technology that was going to solve world hunger and provide world peace," recalls Dwight Klappich, research vice president for Gartner. "People started talking about visibility and event management and the need for better transparency regarding what was going on in the supply chain."

Over time, says Klappich, event management and transparency were merged into a single industry term called "visibility" which focused primarily on shipment and order statuses. UPS and FedEx tracking methods were prime

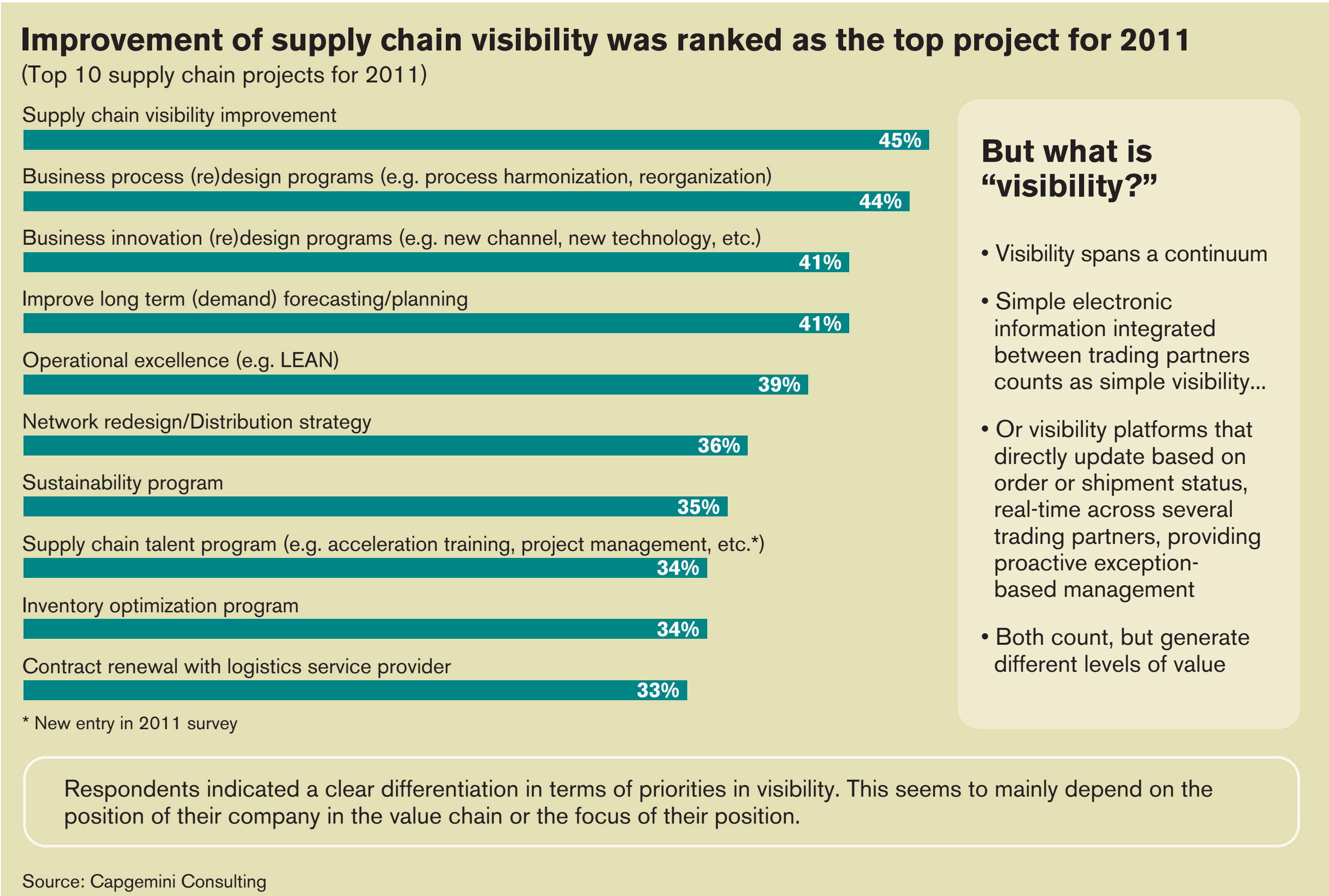
Daniel Guidera

examples of the concept in action, says Klappich. "Shipments were tracked and monitored automatically using technology," he explains, "with alerts sent out to the stakeholders as the item was in transit and ultimately delivered."

However, it would be a few years before such solutions would find their way into the typical shipper's operations. "There were a few vendors with nice technical solutions, but there wasn't a market for those products yet," says Klappich. "Most shippers, coming off of the Y2K events, had technology-hype fatigue and were cautious about emerging technologies."

By the mid-2000s, a new generation of supply chain vendors was on the scene, ready to help shippers achieve UPS-like visibility. Focused on specific, best-of-breed solutions, these firms developed TMS-centric solutions that could track shipments, provide alerts, and help clients achieve visibility, both domestically and internationally. "This second generation proved that there was value in transparency," says Klappich.

Fast forward to 2011 and the next generation of vendors has folded into



its solutions the experiences of its predecessors and shippers' demand for good visibility across the entire supply chain. "Shippers place a premium on being able to do this," says Klappich, who points out that Gartner's research identifies visibility as a prime investment area for companies over the next three years.

"The concept of visibility has been proven," says Klappich, "and more targeted solutions are being developed to meet shippers' needs for tracking orders, inventory, and even people—for functions like employee attendance, for example."

TIMELY, ACCURATE, COMPLETE

As supply chain solutions have evolved, so too have their ability to provide timely, accurate, and complete information, data, and insight about shipments and assets.

Unfortunately, too much data–particularly when it's incorrect or superfluous–can put just as much pressure on the logistics manager as not having the data at all. Throw in the fact that some business partners use EDI, while others rely on methods like email and faxes, and the job of culling through the data to determine what's useful and what's not gets that much harder.

"You can literally drown in information and data," says Adrian Gonzalez, director of Logistics Viewpoints, a supply chain technology blog and analysis organization. "The real value takes place not from gathering all of the metrics, but rather from being able to automate actions based on the information that's coming in."

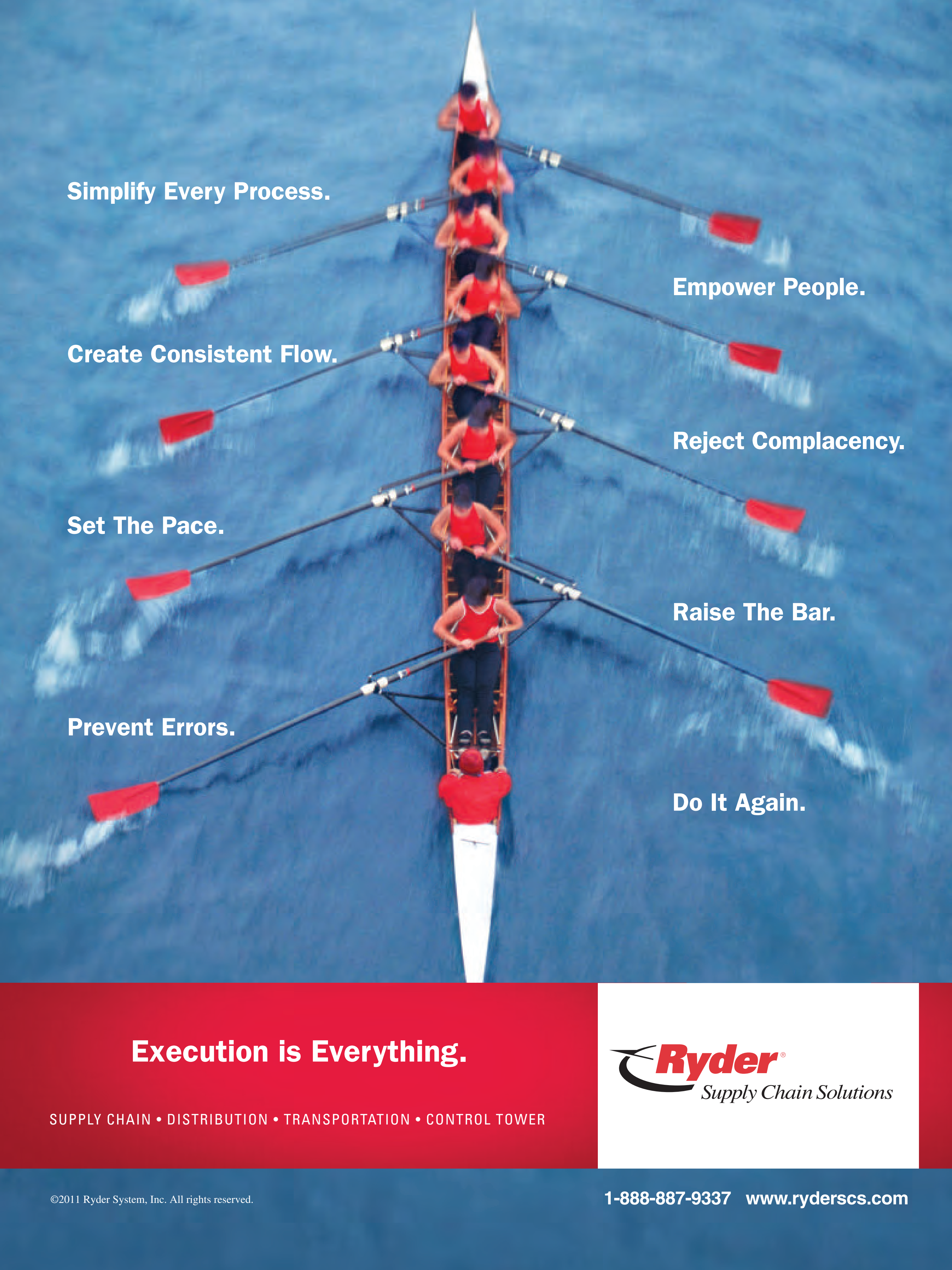
Technology stands as the ultimate facilitator for making that happen. On-demand, or Software-as-a-Service (SaaS) solutions, are particularly good options in that they're web-based, and accessible for trading partners and customers to tap into.

"SaaS TMS and GTM solutions have gained in popularity because they are faster to deploy and require a lower upfront investment, but the hidden value of these solutions lies in their connectivity," says Gonzalez. "By default, an on-demand system creates a connectivity network, or hundreds or thousands of companies that can flow information through a single hub."

Gonzalez points to the integration of a shipper's ERP system with that of its suppliers as a fairly basic step on the road to complete visibility. In that scenario, when a purchase order is issued electronically, for example, automatic status alerts can be set up to show that the purchase order (PO) was received and any edits that were made to it. Shippers can keep tabs on the PO and plan accordingly around its estimated ship date. "That's the basic example of visibility in action," says Gonzalez.

At the other end of the spectrum are software platforms that monitor the status of an order over its lifecycle and spit out shipment statuses regularly throughout that lifecycle. When a PO is placed and inputted into the platform, for example, shippers can track the order from their system and to the outsourced manufacturer's system. The PO is updated to reflect its current status, eventually alerting not only the shipper—but also its carriers and/or logistics providers—to the fact that the goods are ready for pickup.

"With this setup," says Gonzalez,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Creation of an 'Information Hub' is one of the leading practices to improve supply chain visibility

Create an 'information hub' – integrate and aggregate key information from within and outside the enterprise, key order, shipment, and inventory information from all internal ERP, TMS, WMS and other inventory planning systems

Push visibility back to origin – link orders to shipments and manage in-transit inventory which facilitates in collecting information from origin operations

Become your own 4PL – All trading partners integrate to one standard and are managed at both a tactical and strategic level to facilitate central logistics team

Track landed costs along the chain – Reduce total landed costs by tracking product, freight, and insurance costs as well as integrating trade compliance information such as duties, tax, VAT, and other governmental charges

Manage trading partners with scorecards – Using repository of supply chain data, develop scorecards to manage supplier compliance, or transportation booking performance to continuously improve global operations

Streamline supplier interactions – Supply demand synchronization through ongoing visibility into forecast and consumption plans, as well as current inventory status and planned receipts

Achieve organization buy-in – Gain CFO and finance organization's support by extending the visibility solution to add financial settlement and financing triggers

Kick-off green initiatives – Review supply chain processes to identify areas where adopting a greener outlook actually improves business value, for example reduction of fuel consumption through network optimization

Devise risk management framework – Configure visibility tools and solutions for Sarbanes-Oxley (SOX) risk mitigation and for disaster recovery

Source: Capgemini Consulting, GPN Lab Analysis, www.supplychainvisibility.org

"shippers gain more granular control over the execution of the order." Visibility also applies to the demand side of the equation, where customer orders and demand can be tracked using supply chain solutions. "While the traditional view on visibility has centered on tracking inbound logistics and materials management," says Jerry O'Dwyer, principal with Deloitte Consulting, "more companies are now looking for both supply-side and demand-side visibility."

BEYOND THE SUPPLY CHAIN

O'Dwyer says that supply chain visibility as a whole has grown over the last few years to include all activities around planning, sourcing, manufacturing, delivering, and returning goods. As that definition expands—and as supply chains become more global—that level of complexity increases exponentially.

Wilcox concurs, and says technology vendors are stepping up to the plate and helping shippers achieve their visibility goals. Expect this trend to continue over the next few years as shippers not only focus on inbound and outbound visibility, but as they expand the concept into other operational areas.

"When you gain control of the day-to-day operations of your supply chain, that momentum carries over to the financial side of the equation," says Wilcox. "From there, you can reconstruct your supply chain in a way that best addresses your firm's needs." ☐

Bridget McCrea is a contributing editor to Logistics Management.


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EQUIPMENT UPDATE: Automation's evolving role

Labor savings within the four walls of the warehouse/DC is no longer the primary driver behind choosing a highly automated system. Today, materials handling automation solutions represent a broader supply chain play that improves inventory replenishment, advances piece picking, and cuts transportation costs.

By Bob Trebilcock, Editor at Large

Late last year, sister publication *Modern Materials Handling* featured Office Depot's new distribution center in Newville, Pa., on its cover. At the heart of the DC is an integrated piece-picking solution that combines mobile robots for high-density storage and conveyance; light-directed picking to ensure that the associate picks the right item; and a high-speed conveyor and sortation system to get the product to the packing zone.

While this level of automation has been common on high-speed assembly lines for years, it represents a new level of sophistication in distribution. Although the technology allows Office Depot to get a significant amount of throughput from a relatively small labor force, labor savings within the four walls of the DC wasn't the primary driver behind choosing a highly automated system.

Rather, the solution represents a broader supply chain play; it is an enabling technology that will allow Office Depot to completely retool the way inventory is replenished at the stores serviced by that DC. "We believe that the future belongs to the brave," says Brent Beabout, Office Depot's vice president of global network strategy and transportation. "We are in a commodity business and the supply chain is a differentiator. We plan to be on the front end of that."

That is a different way to view materials handling automation, particularly in distribution where the historical approach to system justification was based on a reduction in head count. It got us to thinking: Is Office Depot unique? Or, is something changing in the way the user community looks at automation today? Does the future belong to the brave when it comes to automation inside warehouses and DCs?

To find out, we talked to 10 industry leaders about the state of automation inside the four walls. Here's what we learned.

THE LABOR EQUATION

There is a sense that something is going on in the market: Nearly everyone we interviewed agreed that end users are taking a harder look at automation than in the past even if that has not yet translated into more orders.

"We may be too early in the cycle to be conclusive about what this interest will mean to the market," says Bruce Strahan, president and CEO of The Progress Group. "But I do believe that end users are looking back at the past three years and concluding that all of the layoffs and downsizing they went through was not fun. They want to be prepared for another downturn in demand without wondering every day whether they need 10 more people or 10 fewer based on fluctuations in volume."

What's more, as companies like Office Depot look to logistics as a profit center and an enabler of their broader corporate goals "they are trying to use automation as a competitive advantage over their competitors within their

WITRON Logistics & Information

industry," says Sean O'Farrell, business development manager for Witron.

Solution providers describe an evolving view of automation among the end user community, especially when it comes to automation in the distribution center. Traditionally, that has involved conveyor and sortation systems. That perception, however, is changing.

"More intelligence is required in the distribution center today than in the past, when it was mostly about moving pallets out the door," contends Larry Strayhorn, president of TGW Systems. That complexity is driving interest in automatic guided vehicles (AGVs), robotics, and automated storage solutions along with semi-automated solutions involving software, lights, and voice. "Every company is trying to drive costs out of their supply chain and the DC is the next link in the chain for optimization," Strayhorn says.

Reducing labor has always been the key metric for deciding whether to automate and that remains the case for many projects. However, with so many organizations already running barebone operations, new ways to think about labor and automation are emerging at some companies.

"Our customers are gaining confidence, they are sitting on cash, and they have access to cheap capital," says Jim Stollberg, vice president of global product management for Dematic. "If you look at the unemployment rate, they clearly are not hiring back people. Many are choosing to put that capital to work in automation."

Stollberg and others believe that many of those jobs may not come back. Having already eliminated labor, companies are looking at the costs associated with labor in a different way to justify automation. Those include the increasing cost of training employees given the high turnover rate in many DCs and the inability to find enough labor.

"If a new employee goes out to lunch and doesn't come back, which is happening, the cost of bringing a new employee up to speed is now part of the calculation," Stollberg says.

What's more, there's a growing acknowledgment that in distribution, lights out automation rarely makes sense, while there is an ROI in making the remaining workforce more productive. "One of the first automation projects I ever worked on years ago was in a manufacturing setting where we were focused on getting rid of as much labor as possible to the point that we probably over-automated," says The Progress Group's Strahan. "Today, there's a recognition that you're still going to have people in the equation, so how do you enhance what your people do with automation?"

That may be as simple as adding semi-automated solutions, like voice-directed or light-directed picking to a manual process. "Voice and light technologies haven't changed a lot over the years, but end users have realized they can make the associate on the floor faster and more accurate," Strahan says. "They're making decisions that affect the product the end customer receives as much as it affects their internal ROI."

Those types of technologies also address the diversity of today's workforce. "The fact is, you can put a headset on a Spanish-speaking person while the associate next to him is speaking English, and they can both get the job done," Strahan adds. "That's pretty attractive."

That approach might also involve adding a mini-load automated storage and retrieval system (AS/RS) or carousel to deliver product to an ergonomically designed workstation, adds Tom Coyne, CEO of System Logistics. "The goal is not to eliminate the human component," Coyne explains. "It's to help the associate reach their potential by eliminating walking, eliminating reading, eliminating waiting, or any other extraneous process. The goal is to help the associate rather than eliminate the position."

Reducing labor remains the primary justification for automated materials handling, but some end users are finding their ROI in transportation costs or more efficient store operations.

In that same vein, companies are looking at their manual processes and asking how they can eliminate the non-value-added labor component. "They justify the project not by eliminating a position but by getting better performance out of their people," says Bruce Buscher, vice president of sales for the smart handling division of Jervis B. Webb.

For example, Webb installed an AGV system to automatically remove bins of cardboard from workstations over a two-shift operation. "The cardboard had to be removed several times during each shift and each cycle took someone away from the workstation for about 15 minutes," says Busher. "We designed an AGV to handle special trash bins. When a bin is full, a line worker pushes a wireless call button and the AGV takes the trash out for them."

Last, but not least, companies are looking at automation to create a safer and more ergonomic work environment, especially in the context of an aging workforce. This is already an issue in Europe, where regulations are reducing the amount of weight workers can move at any one time, or during a shift.

That is becoming a concern to some U.S. facilities. "One of our customers is adding automatic palletizers to their tote handling processes," says Jim McKnight, senior vice president for system sales and marketing for Intelligrated. "Since a tote can weigh 50 to 60 pounds, there's a big ergonomic and safety factor to putting in a palletizer beyond reducing labor."

NEW ROI

While labor remains the top reason for automation, several other variables are entering into the ROI justification.

One of those is flexibility, says Bill Casey, president and chief operating officer for SI Systems. "We have manufacturing customers that want the ability to pick a solution up and take their investment with them if they need to expand or move their operations," Casey says.

That's leading to an emphasis on technologies like automatic guided vehicles and carts in manufacturing rather than traditional conveyor or overhead handling systems that were bolted to the floor. "If something changes, they can reprogram the AGV or cart, or if they move, they can load it onto the back of a truck and set it up at a new location," adds Casey.

In fact, the market for AGVs has never been stronger, and not just among manufacturers. "There are whole new markets out there for AGV systems," says Mark Longacre, marketing manager for JBT Corp. and chair of the Automatic Guided Vehicle Systems group at the Material Handling Industry of America. "The cost of the units has come down, software has made them easier and more intuitive to use in the warehouse, and they are capable of handling different scenarios than they did in the past."

Longacre points out that in addition to transporting pallets or product from one workstation to another, AGVs routinely put away and retrieve pallets from drive-through and push-back rack systems and even load trucks.

Flexible automation is also allowing end users to scale their solutions as needs change. "We've designed a fully automated robotic workstation with palletizing and stretch wrapping," says System Logistics' Coyne. "But we have a customer in Europe that implemented the system with manual palletizing to start, with the idea of installing a robot later this year."

Similarly, TGW has developed a pallet-building solution that combines automation with manual palletizing. In this solution, a conveyor delivers a carton to a workstation at an ergonomic level. The operator, rather than a robot or software system, determines how best to build the pallet.

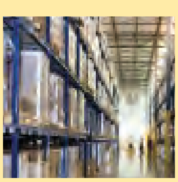
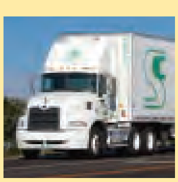
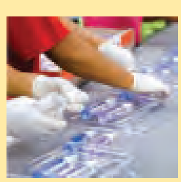
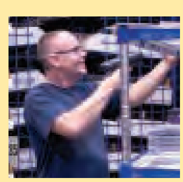
Once a layer is built, the operator steps on a footswitch that lowers the load for the next layer; at the same time, a stretch wrapper automatically wraps that layer. "The idea is to flush as much of the materials handling out of the system as makes sense, while still having the flexibility to easily build a pallet in a certain way," says Strayhorn.

TAKING A HOLISTIC VIEW

As is the case with Office Depot, companies that own their own stores and control their distribution and transportation processes are justifying automation by taking a holistic view of the supply chain, starting with what happens in the store.

"In Europe, we are implementing systems in the retail channel where the focus is on improving the materials handling in the distribution center to reduce the cost of operating in the store," says Strayhorn. In the past, companies have implemented systems that build aisle-ready pallets, meaning that all of the items on a pallet will be put away in a specific aisle in a specific store. The most sophisticated examples can design a pallet so that the top layer will be stored on one end of the shelf with the bottom layer on the other end of the shelf.

Strayhorn is now seeing systems that take that concept one step further, to loading containers—and not just pallets—with product in the order it will go on the shelf. "We've developed a system that picks women's T-shirts by

size and places them in store-ready cartons in the order that they'll sit on the shelf in the women's department," says Strayhorn. "The store associate simply opens up a tote, puts the cartons on the counter and they're done."

Likewise, one of Witron's customers in Southern California justified the cost of a highly automated system on transportation savings. "The system builds a pallet in an aisle-ready fashion which ends up saving them about half a person per store over several hundred stores in their region," says O'Farrell. "But the automation is able to build a load that is taller than the load they can build manually. That's generating a 20 percent to 40 percent savings on transportation because they're getting more cube on the truck."

TARGETED AUTOMATION

The last trend might be something we'll call targeted automation: Embracing automation where it makes sense and embracing smart manual processes where they make sense.

"One of our rules of automation is that an end user should take a long hard look at a lean approach to operating before they automate," says Strahan. "You don't automate more than you need or automate things that shouldn't be automated at all." Instead of spending $20 million to automate 100 percent of your storage, maybe you can spend $5 million to automate 20 percent of your storage and still get productivity gains from smart traditional processes.

CVS is a proponent of this approach, according to Intelligrated's McKnight. Over the years, CVS has built some of the most highly automated distribution centers in North America. Yet, Intelligrated is working on a project with CVS that involves a traditional wide-aisle, low-bay distribution system.

The takeaway: "From working with automation, CVS has learned that it's important to find the right niche," says McKnight. "They will put in lights out automation where it makes sense, but they won't hesitate to put in a traditional solution enhanced by limited automation if that makes sense."

To that end, materials handling companies are developing flexible and scalable solutions that allow their customers to do just that type of targeted automation. One example is a mobile A-frame developed by SI Systems. "It's designed for the warehouse with anywhere from 16 to 64 fast-moving products and spikes in demand that create bottlenecks," says Casey. "You can move the A-frame into place, lock it down and do order fulfillment of any fast-moving product that has stackability characteristics. If your demand picks up, you add another unit."

Materials handling automation has been common in manufacturing settings for years. Now, distributors are looking for ways to bring in targeted automation.

Likewise, Swisslog has developed a high-density storage solution that uses bins for storage and robotic extractors that travel on a grid above the bins. "If a user needs to add more throughput, they can simply add more bins or more robots," says Markus Schmidt, senior vice president of Swisslog. "You can start small and easily expand."

THE NEXT FRONTIER

Over the last several years, tremendous achievements have been made in automated solutions for case picking and palletizing that use automated storage, conveyor, and sortation systems as well as robotic palletizing.

The next frontier is piece picking. It is, after all, the most labor intensive activity in a DC. It is also the process with the most opportunity for error. "Piece picking is what we're all trying to conquer," says TGW's Strayhorn. "There are solutions out there, but I don't know that any of us has solved the problem to the satisfaction of our end users."

The most common approach to automating piece picking is a goods-to-person solution that uses some type of automated storage and conveyor to deliver the products to be picked to an ergonomic workstation. There, lights, voice, or images on a display screen will automatically tell the associate how many items to pick and where to place them. That type of solution is most often used to aggregate a high number of slow-moving stock keeping units into space saving storage and eliminate walking on the part of the associate.

Witron has created a variation of that solution for operations that include case and piece picking in the same order. The systems use an AS/RS to automatically replenish a pick face; pick-to-light to optimize piece picking; and software to marry the individual items picked to a carton or tote with full case picks for that order at the palletizer.

Other solution providers, such as Axium, have developed robotic piece picking solutions that completely automate the piece picking process in applications that include a consistent product.

Developments like these, combined with the sophistication of software for automation, could lead to a brighter future for materials handling automation. "I think the most important development is that the industry and end users are more in tune with creating a solution than selling equipment," says Strahan. "We're seeing more people who understand automation and applications than in the past." □

Bob Trebilcock is Editor at Large for Logistics Management

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EU LOGISTICS: Meeting new challenges

Freight traffic in Europe is steadily growing, and most of its ports, air carriers, and third party logistics providers are making investments in infrastructure and networks to cope with today's new challenges and increase their safety and environmental standards.

By Dagmar Trepins, European Correspondent

It's been a turbulent eight months for European carriers, service providers, and ports as they faced rising fuel prices, the aftermath of the Japanese earthquake and tsunami, political unrest in the Middle East and North Africa, the international debt crisis, and slower economic growth that overshadowed business developments across the region and the world.

Nevertheless, freight traffic in Europe is steadily growing, and most of the ports, air carriers, and freight forwarders are making investments in infrastructure and networks to cope with today's new challenges and to increase their safety and environmental standards.

So, if you're a U.S.-based logistics professional looking to establish or strengthen your logistics and transportation network across Europe, here's a comprehensive update on the state of European logistics as well as the challenges carriers and service providers are currently facing on the roads, on the rails, on the water, in the ports, and in the air.

Air cargo: Still cloudy

According to the International Air Transport Association's (IATA) recent 2011 traffic results, the global air cargo volume dropped by 3.0 percent, while European air carriers reported a 1.3 percent decline compared to June 2010.

Europe's two leading airlines certainly weren't immune to these challenges. In its April-June 2011 quarterly report, the cargo unit of Europe's largest carrier, Air France-KLM, posted an operating loss of 14

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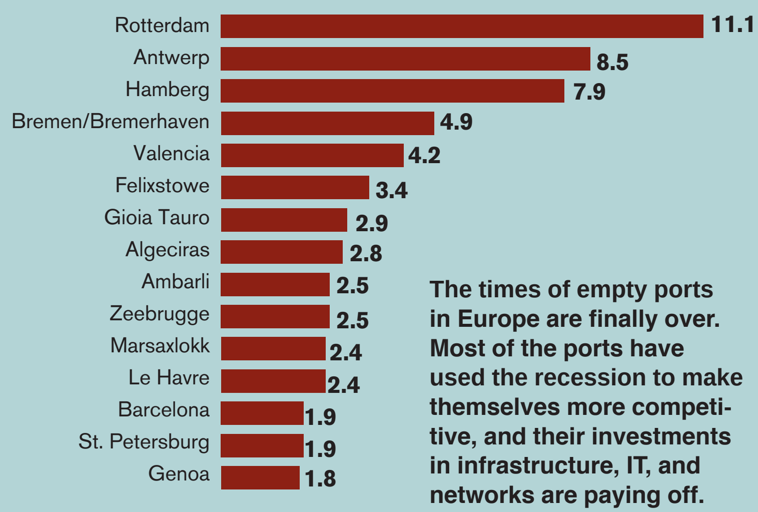
million euros ($20.2 million) due to the crisis in Japan and overcapacity on China departures. Revenues increased by 3.2 percent to 799 million euros ($1.15 billion) compared to the same period last year. During the year, the carrier has concentrated its Air France-KLM Cargo and Martinair Cargo's Americas operations in Atlanta "under one roof" to streamline work and the flow of communication.

In the first half of 2011, Lufthansa Cargo posted an operating profit of 133 million euros ($191 million),

Top 15 European Container Ports
(Container throughput 2010, million TEU)



Source: Port of Hamburg Margeting

falling by 7.6 pecent compared to last year. The carrier's revenue increased by 17.1 percent to 1.5 billion euros ($2.2 billion), while the cargo volume rose 14.8 percent to 953,000 metric tons.

The first half of 2011 saw a capacity increase that came mainly from the MD11 cargo aircraft reactivated following the crises, the 777 freighters delivered to Aerologic—a joint-venture with DHL Express—and Austrian Airlines' capacity that has been integrated into Lufthansa's system since July 2010. In conjunction with a 19.7 percent rise in capacity, the load factor dropped by 3.3 percentage points to 69.1 percent over last year.

Growth was particularly pronounced in the Americas, where tonnage climbed 19.5 percent compared to Europe where it rose 13.4 percent. "Lufthansa Cargo has harnessed the robust development of the global economy and sustained the growth momentum from the previous year," says Lufthansa Cargo Chairman and CEO Karl Ulrich Garnadt.

"We've made our network even more attractive with the addition of new destinations and invested to good purpose in the ongoing development of our products. We posted gains especially in the special services we offer customers to meet their specific needs," says Garnadt.

Expanding its network and improving services, the carrier has also opened a new office in Houston to extend its charter service in the oil and gas industry. The company also made investments into additional transport capacity and IT. "Order placements for five new aircraft of the Boeing 777F type, the re-design of our cargo center in Frankfurt, and modernization of our IT landscape will be of crucial importance for the success of Lufthansa Cargo in the years ahead," adds Garnadt.

Complaints about ETS

It seems that 2011 will continue to be a turbulent year for the aviation and air cargo industry. The introduction of the EU Emissions Trading Scheme (ETS), which forces airlines flying through EU airspace to join the ETS system and buy carbon credits from January 2012 on, has provoked international protest in the industry during the last months.

"The EU is not sovereign over the U.S. or the rest of the world, and has no right to levy taxes outside of the EU," says Tom Petri, chairman of the U.S. Aviation Subcommittee. Petri suggested working with the international civil aviation community through the UN International Civil Aviation Organization to seek a global solution.

European airlines also expressed concerns about ETS. Lufthansa CEO Christoph Franz, for example, fears a massive distortion of competition for European carriers and a shift of traffic via the Middle East. He estimates additional costs of 150 million to 350 million euros per year for his company to comply with the ETS system. IATA general director Giovanni Bisignani also calls for a global approach and warns against a "$1.5 billion cash grab that would do nothing to reduce emissions."

EU Ports: Expansion time

The times of empty ports in Europe are finally over. Most of the ports have used the recession to make themselves more competitive, and their investments in infrastructure, IT, and networks are paying off—as results from the first half of 2011 clearly indicate.

Port of Antwerp: Europe's second largest port, Antwerp handled 96 million metric tons of freight during the first six months of this year, representing an increase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of 10.4 percent compared with the first half of 2010. Container cargo went up 3.4 percent from 51.3 million metric tons to 53 million metric tons. In terms of standard containers (twenty-foot equivalent units), the volume increased by 4.3 percent to 4.4 million TEU. Conventional/breakbulk cargo also showed a high growth rate of 16.9 percent, while bulk cargo rose by 21.5 percent and ro-ro increased 16.3 percent over the same period last year.

The deepening of the Western Scheldt has made the port easily accessible not only to ultra-large container ships of over 10,000 TEU, but also to capesize vessels. These bulk carriers are too large to pass through the Panama and Suez canals and have to travel around the Cape of Good Hope or Cape Horn. The port has established the "dry bulk" workgroup, made up of various players in the port, to bring such large carriers to Antwerp and to boost its position as a leading hub for large-scale, coal handling and conventional breakbulk. The arrival of the first capesize vessel, MG Courage, in July is a result of this joint initiative.

Port of Hamburg: Germany's largest seaport showed strong growth in seaborne cargo throughput in the first half of this year. Hamburg handled 64 million metric tons of cargo, which is 9.4 percent more than during the first half of 2010.

With a growth rate of 17.4 percent, container traffic via Hamburg amounted to 4.4 million TEU in the first six months of this year. The biggest increase in Hamburg's container trade was with the U.S. where the port reported an increase of 47.4 percent and was successful in winning back market shares in the European-U.S. Atlantic container trade.

New liner services and Hamburg's geographic position, which offers very short distances to the growth markets in Eastern Europe and Russia, are advantages responsible for this positive development. In August, the PAX container liner service changed from their former German port of call, Bremerhaven, to Hamburg. This liner service, operated by the shipping lines Hapag Lloyd, NYK, and OOCL, now offers fast Atlantic passages for U.S. and European shippers via Hamburg.

Investments in infrastructure and development of new IT services further improve the service of Northern Europe's hub port, a main distribution center for trade with Germany, the Baltic Sea region, Eastern Europe, Austria, Switzerland, and Russia. The port also invested in a new electronic road traffic management system to inform truck drivers about the current traffic situation on the port roads.

In 2012, the port is also going to implement a new IT system to optimize its rail traffic network within the port area. With more than 220 cargo trains per day, Hamburg is Europe's largest rail port.

Port of Rotterdam: In the first half of 2011, 215 million tons of cargo was handled in the Port of Rotterdam, a

Geodis Wilson took two, 42-meter-long blades (inset) from a production facility in China and shipped them to Denmark—the longest, single cargo elements ever transported by air. Around 600 new offshore wind power stations are planned along the coasts of Great Britain, Denmark, Germany, Belgium, and the Netherlands through 2040.

light growth of 1 percent compared with the same period of 2010. Europe's largest port showed an increase of 12.2 percent in general cargo throughput, which reached 74.7 million tons.

Container traffic went up by 9.7 percent to almost 6 million TEU, mainly driven by new services to and from the Far East and South America, increases in transshipment especially to and from Russia, and recovery in intra-European short-sea traffic. Trade with North America declined due to cuts in the number of services calling at Rotterdam.

"The significant unrest on the financial markets and its influence on the trust of consumers and producers can have a negative influence on world trade and thus on our throughput," says Hans Smits, CEO of the Port of Rotterdam Authority. "There is a significant need for quicker and clearer political decision-making to sway negative sentiments. I expect that throughput in the third quarter will stay on target." The port's main expansion project, Maasvlakte 2, is proceeding according to schedule and the first containers are expected to be processed in 2013.

Duisport: Europe's largest inland port, Duisport set a new record in the first half of the year. Container transport by ship, rail, and truck rose to 1.2 million TEU, up more than 10 percent compared with the previous year's period.

"If the development in container handling continues into the second half of 2011, we are optimistic that last year's record of 2.25 million TEU in total from can be increased again," says Erich Staake, CEO of Duisburger Hafen AG. According to Staake, the basis for this success is the port's business model as an integrated provider of logistical services.

The port attracted new investors this year, such as the international logistics company Samskip, with its subsidiary Van Dieren for its new intermodal transport terminal in Hohenbudberg. With a focus on the growing Brazilian market, Duisport and the Brazilian ports ministry also signed an agreement to support the government in drafting a logistics concept for the so-called Sao Paulo-Santos corridor for flows of goods between the Brazilian coast and hinterland.

Port of Hamburg has invested in a new electronic road traffic management system to inform truck drivers about the current traffic situation on the port roads.

EU 3PLs: Strong performance

Despite the debt crisis in Europe and a volatile world economy, Europe's leading third-party logistic providers (3PLs) are recording a strong performance. According to Transport Intelligence's (Ti) latest *Global Freight Forwarding 2011* report, European forwarders dominated the market in 2010 by occupying six of the Top 10 positions with a 44 percent share of the total global market.

The world's largest forwarder in terms of combined air and sea freight revenues was Kuehne+Nagel, followed by DHL, DB Schenker, and Panalpina. The U.S. forwarder Expeditors ranked fifth, followed by Sinotrans, CEVA Logistics, Agility, UPS Supply Chain Solutions, and DSV.

In giving an outlook for 2011, Ti's CEO John Manners-Bell points out the following: "Forwarders are enjoying somewhat of a golden period. Air and sea volumes are still growing, albeit not as rapidly as last year. In addition, extra capacity brought on by shipping and air carriers has meant that rates have softened, meaning that forwarders' gross margins will expand. Our research suggests that this should be by around 2 percentage points."

During the first half of 2011, the Kuehne + Nagel Group achieved growth above the market average in all business units. Despite considerable negative currency effects, net earnings improved by 11 percent to CHF 312 million. Seafreight volumes increased by 12 percent in the first half of the year, doubling the market growth rate of 6 percent, mainly achieved by exports from Europe to North America and Asia as well as from Asia to Latin America and the Middle East.

Despite a sharp decline in volumes in the global airfreight market during the second quarter, the group increased its tonnage by 18 percent in the first six months. Kuehne + Nagel's expansion in perishable logistics following acquisitions in South America, as well as increased demand in the trade lanes from Europe to North America and Asia, contributed to the strong performance.

DB Schenker, the logistics arm of the German national railroad Deutsche Bahn and one of the leading transport and logistics providers in the U.S. and Europe, has restruc-

DB Schenker, which combines the units DB Schenker Rail and DB Schenker Logistics, has expanded its rail services to shift cargo from road to rail.

tured and expanded parts of its transportation network. In July, the company announced that it would eliminate its U.S. air fleet and close its Bax Global cargo hub in Toledo, Ohio. "As a result of the prolonged recession and spiking fuel prices, more customers are opting for expedited ground-based solutions instead of domestic air freight," says Schenker CEO Heiner Murmann.

The company will continue its air cargo business through a more flexible cooperation with other carriers and with a new focus on smaller clients who need transportation management. In Europe, DB Schenker, which combines the units DB Schenker Rail and DB Schenker Logistics, has expanded its rail services to shift cargo from road to rail. In the summer, DB Schenker Rails ran the first European sized freight train via High Speed 1 in the U.K.

The curtain-sided swap bodies moved on this train, with an internal height of three meters (around 9 feet, 10 inches), provide significantly larger haulage capacity. In the U.K., they can only be utilized on the High Speed 1 route from the Channel Tunnel to London, as it's the only European-sized rail route in the country.

Following the success of this initial operation, DB Schenker Rail plans to run the first full train of European-sized swap bodies, and then initiate regular services to connect the U.K. to the rest of its pan-European rail freight network via the High Speed 1 route. This will open a new market for customers to export and import goods more efficiently using larger railcars.

New market for EU 3PLs

While looking for new markets, the wind energy sector offers new potential for EU logistics providers. According to analyses by the Prognos Institute, expansion in offshore wind energy production is strongly centered on Europe.

Europe now accounts for 86 percent of the wind power farms currently approved, in construction, or in operation worldwide. They add up to a total capacity of around 28 gigawatts. Around 600 new offshore wind power stations are planned to be built along the coasts of Great Britain, Denmark, Germany, Belgium, and the Netherlands through 2040. Depending on construction sites and water depth, transport and logistics are estimated to account for roughly 20 percent to 25 percent of the project costs—and 3PLs can expect to see lots of work coming their way in this area.

For example, the global freight management and logistics company Geodis Wilson is a major service provider for the wind energy sector and has experience in this area since 1997. Since wind energy has become a key market within its vertical strategy, the company established a specialist team for wind energy logistics within its industrial projects division.

Henrik Funk, global manager for wind energy projects at Geodis Wilson, sees a trend within wind energy as manufacturers and suppliers are more and more interested in full-service providers that have their own equipment. "This is where we see our advantage. Being part of the SNCF Geodis group, we are able to deliver solutions and services along the entire supply chain using all modes of transportation within a worldwide network," says Funk.

Informed sources also say Geodis Wilson plans to promote the European rail transport assets of its parent company SNCF to create new transport solutions for the wind energy sector.

One of the company's major global accounts is LM Wind Power for which it organized the transport of new LM wind turbine blades from China to Europe. Geodis Wilson's specialized Industrial Project division took over two 42 meter long blades from an LM production facility in China and shipped the blades to their final destination in Denmark—the longest, single cargo elements ever transported by air.

"The fact that we have an established network presence in both China and Denmark, along with a dedicated air charter division, on-site expertise, and technical support in this sector, certainly helped us to successfully manage this move," adds Philippe Somers, senior VP of Geodis Wilson Industrial Projects.

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Ocean Cargo: Regulations ahead

Europe's ocean cargo industry faces turbulent seas, just like the rest of the global community. In addition to the burden of the overall economic development, they have to cope with new environmental regulations.

Based on the latest proposal from the European Commission (EC) in July, the ocean shipping industry has to reduce sulfur dioxide emissions by up to 90 percent, and fine particle emissions by up to 80 percent by 2015. The EC is expecting a benefit for public health between 15 billion and 34 billion euros, far exceeding the expected costs—which are in the range of 2.6 billion to 11 billion euros.

The proposed legislation revises the directive on the sulfur content of certain liquid fuels and incorporates new IMO standards into EU law to ensure their proper and harmonized enforcement by all EU Member States. Under the proposal, as of January 1, 2015, the maximum permissible sulfur content of maritime fuels used in sensitive areas such as the Baltic Sea, the North Sea, and the English Channel will fall from the previous level of 1.5 percent to 0.1 percent.

Ships will be allowed to use equivalent technologies such as exhaust gas cleaning systems as an alternative to using low sulfur fuels. Other changes proposed include more unified reporting and verification as well as sampling provisions aligned with international standards. The proposal is to be phased in from 2015 to 2020.

European ocean carriers, such as Hamburg Süd, have responded by investing in new technologies. Most of Hamburg Süd's new vessels, for example, are fitted with a novel common rail injection system or electronically regulated fuel valves. These new injection designs result in better combustion and subsequent fuel savings, especially in partial-load operation.

Exhaust emissions are therefore lower than with traditional propulsion engines. The most recently ordered ships of the "Santa" class, with a slot capacity of 7,000 TEU, will also be equipped with diesel generators for energy production using common rail injection.

In addition, the use of modern compressor technology in most of its fleet enables Hamburg Süd to operate extremely energy-saving reefer transport. And as one of the first shipping companies worldwide, Hamburg Süd has championed efficient scroll compressors since 1997.

In July of this year, Hamburg Süd was honored for its commitment to sustainability and the environment in the U.S. The San Pedro Bay Ports Clean Air Action Group, which is backed by the ports of Los Angeles and Long Beach, awarded the company its Air Quality Award. In the same month, the company also won the Gulf Guardian Award of the U.S. Environmental Protection Agency (EPA).

For Lufthansa, the first half of 2011 saw a capacity increase that came mainly from the MD11 cargo aircraft being reactivated following the recession.

Future developments?

Many EU carriers and service providers have become very careful about making any predictions about the outlook for coming economic developments. The debt crisis in several European countries and the U.S., as well as the ongoing turbulence on the finance market, is a major source of concern for the transportation and logistics sector.

Since many investments require long-term planning, the overall market is hoping for favorable developments and to see positive results for the year as a whole—stay tuned.

—Dagmar Trepins is a European Correspondent to Logistics Management

Web links to EU organizations mentioned:

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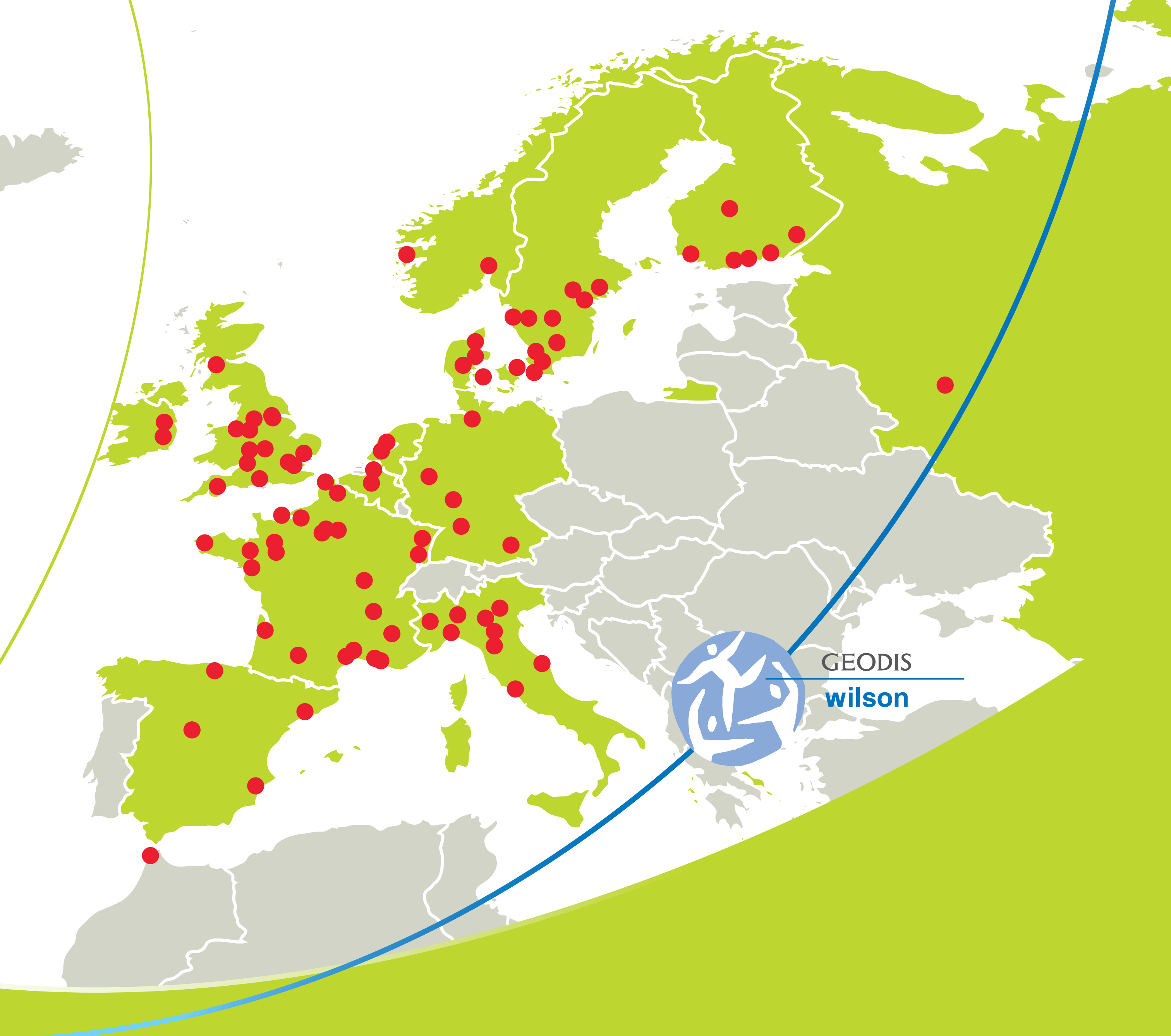
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Fast forward toward RECOVERY

While industry analysts slightly differ on who belongs on the "Top 25" list this year, all agree that the most dynamic freight forwarders are only going to get bigger and smarter as the global marketplace becomes more complex.

By Patrick Burnson, Executive Editor

The old version of the freight forwarder is one who would speak directly with clients and warehouses around the world to arrange the movement and storage of freight. Today, the description of a forwarder has become far more complex.

They now take this information and pass it along to the appropriate party whether that be the carriers, third-party service providers, Custom agents, or the shippers themselves. Along with making certain that the freight gains entry into the country, a forwarder must now arrange for cargo to be picked up and delivered to the final consignee's place of business. This requires contacting trucking companies, rail lines, or even sometimes exporting the goods to a different country for final delivery.

This complexity has created new opportunities for some of the world's leading freight forwarders to upgrade their services and IT capabilities in order to keep up with growing demand. And while industry analysts differ somewhat on just who belongs on the "Top 25" list this year, all agree that the same players are only going to get bigger, smarter, and stronger as the global marketplace spreads into new regions.

Who's at the top?

Research by Transport Intelligence (Ti), contained within its latest report *Global Freight Forwarding 2011*, finds Swiss-based Kuehne + Nagel (K+N) topping the ranking of the world's largest forwarders in 2010 in terms of combined air and sea freight revenues. According to Ti, DHL came in second place.

The leading 10 freight forwarders make up 44 percent of the total market. This share has been gradually increasing—from 40 percent in 2006—as the largest players crowd out smaller competitors. However, the market is still highly fragmented

Illustration by Jean-Francois Podevin

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Armstrong & Associates Top 25 global freight forwarders
(Largest providers by 2010 gross revenue and freight forwarding volumes)

A&A Rank	Provider	Net Revenue (US$ Millions)	Gross Revenue (US$ Millions)	Ocean TEUs	Airfreight Metric Tons
1	DHL Supply Chain & Global Forwarding	19,816	30,486	2,772,000	4,435,000
2	Kuehne + Nagel	5,727	19,476	2,945,000	948,000
3	DB Schenker Logistics	9,120	18,999	1,647,000	1,225,000
4	Panalpina World Transport (Holding) Ltd.	1,423	6,887	1,241,000	892,000
5	UPS Supply Chain Solutions	6,462	8,923	700,000	862,000
6	CEVA Logistics	5,670	9,091	672,000	536,000
7	Sinotrans Ltd.	1,044	6,286	6,944,000	384,100
8	Expeditors International of Washington, Inc.	1,693	5,968	879,713	807,211
9	Bolloré/SDV Logistics	1,233	6,163	705,000	500,000
10	DSV A/S	1,678	7,661	710,000	250,000
11	Nippon Express Co., Ltd.	1,476	18,450	330,900	855,400
12	Pantos Logistics Co., Ltd.	2,972	2,972	1,512,444	330,485
13	Yusen Logistics Co., Ltd.	2,400	3,814	600,000	500,000
14	Agility	1,701	5,266	550,000	490,000
15	Kintetsu World Express, Inc. (KWE)	468	3,057	465,047	869,225
16	Hellmann Worldwide Logistics GmbH & Co. KG	937	4,687	407,665	513,278
17	UTi Worldwide Inc.	1,556	4,550	476,000	421,000
18	Damco International A/S	1,200	2,700	610,000	75,000
19	Geodis	1,673	5,578	385,000	152,000
20	C.H. Robinson Worldwide, Inc.	1,467	9,274	258,756	45,000
21	Kerry Logistics	840	1,400	576,000	158,900
22	Logwin AG	1,333	1,801	430,000	170,000
23	Toll Holdings Limited	4,200	5,303	185,000	130,000
24	Hyundai GLOVIS Co., Ltd.	6,303	6,303	247,545	34,819
25	Sankyu Inc.	490	2,341	710,000	18,060

with K+N holding just under one tenth of the total.

Largest, however, does not necessarily mean the most profitable, says Ti analysts. Expeditors enjoys margins of over 9 percent compared with most of the largest companies, which operate at margins between 2 percent to 4 percent.

According to Ti CEO John Manners-Bell, the market will enjoy another successful year in 2011. "Forwarders are enjoying somewhat of a golden period," he says. "Air and sea volumes are still growing albeit not as rapidly as last year. In addition to this, extra capacity brought on by shipping and air carriers has meant that rates have softened, meaning that forwarders' gross margins will expand."

Dick Armstrong, chairman of supply chain consultancy Armstrong & Associates, says that his research came to many of the same conclusions. "We had DHL ahead of K+N in our net-earnings picture, but the leading providers are really in very heated race at the top," says Armstrong.

He adds that there's a certain paradox when considering that most of the strongest performing companies are from Europe when most of the actual business is generated in the Asia Pacific arena. "And don't expect to see any startups get into this picture," he says with a laugh. "The barriers to entry are incredibly high, and it would take vast amounts of money and other resources to penetrate this market. The capital outlay for technology alone is overwhelming, and finding the right people to create the network would also be a daunting task."

According to Armstrong, the top forwarders are simply an extension of global third-party logistics providers (3PLs). Given the huge scale of these operations, it should come as no surprise that they would have the leverage to compete for market dominance.

"And that includes human resources as well," says Armstrong. "Expeditors, for example, lost a number of high-earning sales executives in the past couple of years. To the company's credit, they kept faith with their staff by not having lay-offs during the recession. However, by reducing the commissions paid to top performers, they effectively got closer to other dynamic competitors like UPS."

These "top performers," says Armstrong, are selling complete supply chain packages in their sales pitch. This includes value-added warehousing and transportation management. "The leading forwarders are going to replace old fashioned sales activity with incentive based pay structures," he says. "And this, in turn, will reward innovation."

Is it a "closed" market?

Brandon Fried, executive director of The Airforwarders Association, agrees with most of Armstrong's conclusions, but takes issue with the "closed" market theory. He contends that "the barrier to entry" into the freight forwarding business is *not* insurmountable, noting that for those forwarders with a defined business plan focused on specific niche marketing, there's still room at the top.

"The days of opening a generalized freight transportation business by the small guy may be over in favor of a more focused and specific transportation approach," says Fried. "Of course, this includes offering additional services that complement the transportation of the box itself. These may include warehousing, local distribution, pick and pack, or some form of commodity assembly before shipping. However, the sensitive, personal touch is always in demand and appreciated by customers who are not willing to be an anonymous entity with their freight company."

Fried says that while each of the "giant" forwarders do interesting work, K+N tends to receive lots of coverage for its creative shipment fulfillment solutions before or after the transportation cycle occurs. "However, we cannot fail to mention companies like Expeditors," he says. "This is an outfit that is highly regarded by their customers and continues to receive accolades—not only from clients but Wall Street as well. The firm is highly profitable in a very competitive, asset-free environment."

Advantage Asia

The leading forwarders agree that the dynamism and complexity of the Asia Pacific transport and logistics market offers the best prospects for growth and returns. This also happens to be one of the key conclusions of *Asia Pacific Transport and Logistics 2011*, the latest report from Ti.

"While logistics companies in Europe and North America are coming to terms with a long-term weak economic environment, Asia offers many more opportunities," says Cathy Roberson, the report's principal author.

The report identifies three key drivers of growth:

1. The rapid development of the Chinese economy shows little sign of slowing, and its progression from low-cost manufacturing base to high-value production location is marking a new stage in its evolution. As labor costs rise in China, production is spilling over into neighboring, lower cost markets. Both trends offer numerous opportunities to freight forwarders and contract logistics providers.

2. The Integration of the leading Asian economies is proceeding fast with free trade agreements reducing barriers to international commerce. Logistics companies can increasingly view parts of the region as a "single market."

3. Governments throughout the region are investing in numerous transport infrastructure projects as intra-regional trade increases, facilitating the provision of logistics services. Emerging countries such as Laos, Cambodia, and Sri Lanka have seen major boosts in their economies as the number of manufacturing operations increase and disposable income rises.

Consequently, these countries are rapidly ramping up projects to build airports, roads, and rail networks in order to compete in the global economy.

"Although the region will remain an export leader for years to come, the growing intra-regional trade is creating an intricate supply chain, particularly as China advances to more skilled manufacturing and lower-value production migrates to other Asian countries," says Roberson. "Growth in contract logistics, express, and freight forwarding services is expected to maintain double-digit increases through 2014 with China and India leading the way."

Bimco, an independent international shipping association based in Bagsvaard, Denmark, is also reporting that increasing freight rates on the Far East—Europe trading lane is "a very positive sign."

Bimco's chief shipping analyst, Peter Sand, says that at the same time, however, rates will continue to decline "on the forward curve" in the transpacific trade. Staying ahead of the "forward curve" could be good advice for freight intermediaries, too, say industry analysts.

Top 25 forwarders, they say, will continue to invest in the future as demand for their services swings back into a global pattern of economic recovery.

—Patrick Burnson, Executive Editor

Faster future?

While many of the analysts have reported fairly rosy times over the past year, many of the leading forwarders are still cautiously optimistic about their prospects for the remainder of 2011 and into 2012.

"I am pleased with the high organic gross profit growth in our reporting regions of North and Latin America, as well as the Asia Pacific," says Panalpina's CEO Monika Ribar. "This year has taken its toll on the volume development, however."

She adds that after Panalpina terminated certain high-volume, low-margin contracts, the company was not able to compensate for these volumes fast enough with new business. "The market slowdown in the second quarter of 2011 did not help in this regard," says Ribar.

UPS, a company that Armstrong calls "the 800-pound gorilla of supply chain services," is equally circumspect. "Despite softening economic conditions, UPS delivered its highest ever second quarter earnings per share," says Kurt Kuehn, UPS's chief financial officer. "These results were driven by the quality of revenue in U.S. domestic, superior export volume growth in international, and record supply chain services and freight results."

CEVA's CEO, John Pattullo, notes that the company's performance in the second quarter demonstrates a solid continuation of positive trends over the past year. "Despite the industry-wide softening of freight volumes, we have increased freight management business with our global customers, and we have experienced growth in our contract logistics business in all regions," he says. "Our new business performance in the period has been excellent with significant wins and contract extensions."

According to Armstrong, CEVA's reliance on heavy machinery has been a plus, particularly while it continues to expand into other markets. The company is hardly alone in this regard, however.

"We're continuing to grow and have kept the positive momentum of the last quarters," says Frank Appel, CEO of Deutsche Post DHL. "The second quarter once more proves the quality and sustainable nature of the efficiency gains we have achieved over recent years."

According to Appel, all DHL divisions continued to benefit from the ongoing, albeit slow global economic growth, as well as its market position in the world's fast growing regions—particularly in Asia. □

—*Patrick Burnson is Executive Editor of* Logistics Management

SAGE ADVICE

8 forces altering the transportation industry

By Wayne Bourne

I WAS MILDLY SURPRISED the other day when a colleague from my past said: "Now that capacity has shifted to the carrier side, rates will surely follow as a result." I replied: "That's merely a convenient factor to base that prediction."

Although limited capacity is a factor, it's only one of many factors currently driving rate increases—with none being less important or less impactful than the other. Let's take a look at some of the more salient and obvious issues that will be putting even more stress on your transportation budgets over the next year.

Capacity: When the downturn in the economy occurred, many of the carriers were heavy in equipment and used the tough conditions to right size their fleets. Most major carriers pruned hundreds of tractors from current fleets and from existing on-order commitments.

The results of this pruning created fleet sizes that were more "profitably fit" to the reduced demand and pricing structures. And with the gradual turnaround in the economy beginning to show its effects, carriers have been inclined to keep equipment, therefore capacity, at the new, lower levels.

Drivers: Thousands of drivers are exiting the industry each year as the baby boomers reach retirement age, while the stress and poor lifestyle pushes many others out of the job. Low rates over the past few years haven't provided carriers with the resources to improve driver wages to a point that would stem the flow. And with no fluid source of new recruits, the impact will be felt in retention rather than recruitment.

Equipment: New rulings by the EPA, as well as new standards that have yet to be met, have contributed to substantial increases in the prices of tractors and trailers. Wild fluctuations in petroleum-based rubber and plastics have also added to the rise. New technology, electronic generators, communication systems, EOBR units, trailer skirts, and brake and back-up warning systems are introducing potential efficiencies, but are doing so at a significant cost of acquisition and installation.

Fuel: It's no secret that fuel is going up and there's no question that it will continue to escalate particularly as we trudge through the high-volume summer driving months and enter the high-volume, seasonal inventory build-up months. Most economists are predicting a $5/gallon (diesel) national average by spring of 2012 and spot prices of $6/gallon in certain locations. Fuel surcharges based on $1.18/gallon are not only obsolete, but are also very misleading to those folks assigned the task of preparing budgets and pricing.

Insurance premiums: Major carriers have traditionally viewed these insurance costs as simply a cost of doing business. Not any more. Not only have premiums shot up dramatically and continuously, but also certain carriers have been denied coverage due to the inherent risks their business model presents.

Government intervention: Hours of service (HOS) is in its fourth iteration since the 1998 ruling that remodeled the hour sequence a driver can stay behind the wheel. Each version has been more complex and less productive. The saga continues with what is hoped to be a lasting ruling that will settle once and for all the issue of how long a driver can drive in a 24-hour period.

Far East imports: As the U.S. expands its love affair with all things Chinese, the impact of the resulting congestion at the ports on the West Coast will manifest itself exponentially. Import containers handled at these ports are at an all time high and growing. And while shippers have commissioned studies on East Coast port diversion, few have actually pulled the trigger on an all-water route to the East Coast on Far East imports.

Performance metrics: As the negotiating pendulum swings from the shipper side to the carrier side, rates that have been suppressed will obviously increase. In turn, carriers will develop *a la carte* pricing to accommodate non-routine special services, and relationships will be further defined with a view toward bi-lateral partnerships that certain customers practiced during the times when they didn't have to. All this will re-emerge as a new "value proposition" model and capacity will go to those that fit that model.

The bottom line: The shippers that are able to redesign their logistics models will be the ones that pay the least and solidify the relationships between themselves and the carrier partners. ☐

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