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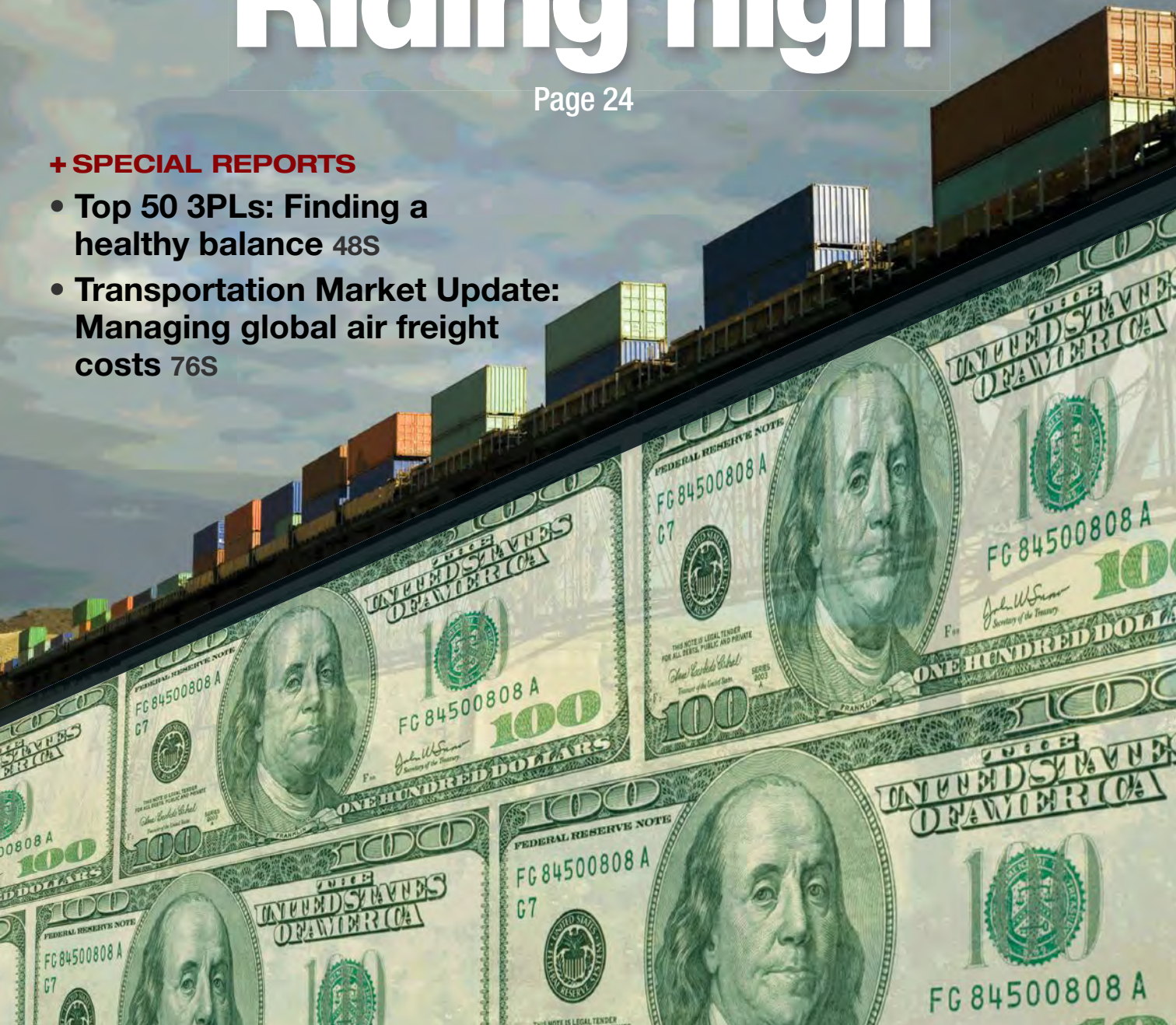
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Riding high

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management UPDATE

AN EXECUTIVE SUMMARY OF INDUSTRY NEWS

◆ **LM remembers former House T&I Committee Chair Oberstar.** *Logistics Management* regrets to report that James L. Oberstar, former Chairman of the House Transportation and Infrastructure (T&I) Committee and Minnesota Congressman, passed away on May 3. He was 79. Oberstar served in the House for 36 years and was the longest serving Congressman ever from Minnesota, according to a *Washington Post* report. The report added that in the world of transportation, Oberstar had an international reputation as an expert and as an advocate of public investments to spur private growth. Oberstar chaired the House T&I Committee from 2006 to 2010, and prior to that served as ranking minority member of the committee. Prior to losing to Republican Chip Cravaack in the 2010 mid-term elections, Oberstar was in the process of developing a six-year, \$450 billion successor bill to the previous federal transportation authorization, SAFETEA-LU, which expired in 2009.

◆ **Warmer weather brings higher volumes.** The most recent edition of the *Port Tracker* report from maritime consultancy Hackett Associates and the National Retail Federation (NRF) paints a positive future for cargo growth at U.S.-based retail container ports in the coming months. June and July are expected to be up 5.6 percent and 3 percent, respectively, with the first half of 2014 expected to be up 5.1 percent at 8.2 million TEU. Hackett Associates Founder Ben Hackett wrote in the report that “most economic fundamentals are pointing in the direction of continued sustained recovery in consumer demand and import volumes, much as we had projected.” He added that this is turning out to be the longest period of growth for some time. However, Hackett expressed concern about the continued high inventory-to-sales ratio, which he said could be due to a mix of rate negotiations and fear of industrial action.

◆ **ATA's *Trucking Trends* shows more market share gains.** The role trucking plays in the U.S. economy was made clear in this year's edition of *American Trucking Trends*, an annual report published by American Trucking Associations (ATA). This year's edition highlights various facets of trucking's imprint on the transportation landscape, including that in 2013, trucks moved 69.1 percent

of all domestic freight tonnage, up from 68.5 percent the previous year; the industry collected 81.2 percent of all freight revenue, up from 80.7 percent in 2012; and trucks moved the majority of all NAFTA trade, hauling 55.4 percent of all trade with Canada and 65.4 percent of all trade with Mexico. As ATA's Chief Economist Bob Costello points out in the report, *American Trucking Trends* serves as a snapshot of what the trucking industry and freight economy look like, and provides key insight for trucking industry stakeholders.

◆ **Ocean carriers hike rates.** Trans-Pacific container lines continue to experience a surge in the eastbound bookings that began in January, an upswing that's expected to continue into the second half of 2014, with vessel utilization in the mid-90 percent range via the West Coast ports and in the upper 90 percent range heading to East and Gulf Coasts ports. To cover contingencies in the event of an earlier than usual peak season, member lines in the Transpacific Stabilization Agreement (TSA) have adopted a \$400-per-40-foot-container (FEU) peak season surcharge (PSS) for all shipments, effective June 15, 2014. Prior to the PSS, TSA carriers have recommended a guideline general rate increase of \$300 per FEU to the West Coast and \$400 per FEU to all other U.S. destinations to further help offset rate erosion seen in recent months.

◆ **More Maersk.** With so much attention now being placed on trade agreements between the EU and in the Transpacific, U.S. shippers may wish to take a fresh look at what one leading ocean cargo carrier is doing within the parameters of the existing North America Free Trade Agreement (NAFTA). Starting early next year, the resurrected U.S. carrier, SeaLand, will be coming back under the auspices of Maersk Line to serve its existing Intra-Americas service network. This will also shift the logistics weight to the Caribbean Basin in anticipation of the Panama Canal expansion. SeaLand was acquired by Maersk Line in October 1999. “This reorganization is an investment in our global container business,” says Vincent Clerc, chief trade and marketing officer with Maersk Line. “It enhances and strengthens service

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LM management UPDATE

AN EXECUTIVE SUMMARY OF INDUSTRY NEWS

in this important and growing trade region, as well as the future of our overall global service network.”

◆ **Tough times continue for the USPS.** The United States Postal Service (USPS) reported a net loss of \$1.9 billion for the fiscal second quarter, marking the 20th loss the service has incurred over the last 22 quarters. Even though it took a net quarterly loss, operating revenue was up 2.3 percent at \$16.7 billion. Despite another steep loss, there were some glimmers of optimism emanating from the USPS, at least on the Shipping and Package Group side. For the fiscal second quarter, USPS officials said that the group’s revenue was up 8 percent, or \$252 million, and was driven largely by e-commerce growth. Revenues for its last-mile services—Parcel Return and Parcel Select—were up 26.4 percent.

◆ **Internet of things expanding before our eyes.** The future explosion in the number of intelligent devices will create a network rich with information that allows supply chains to assemble and communicate in new ways, so says analysts at Gartner, Inc. The research firm forecasts that a 30-fold increase in Internet-connected physical devices by 2020 will significantly alter supply chain leader information access and cyber-risk exposure. The Internet of Things (IoT) is forecast to reach 26 billion installed units by 2020, up from 0.9 billion just five years ago, and will affect the information available to supply chain managers and how they run their operations. “Because of the fast pace at which it is emerging, it’s important to put IoT maturity into perspective, so supply chain strategists need to be looking at its potential now,” said Michael Burkett, managing vice president at Gartner.

◆ **Matson bullish.** Adhering to its initial positive forecast for 2014, Matson, Inc. says its businesses performed as anticipated in the first quarter of 2014, driven by sustained demand in their core markets. “While the timing of fuel surcharge collections significantly affected financial results during this [past] quarter, our businesses are running well and continue to generate substantial cash flow,” said Matt Cox, Matson’s president and CEO. “Coupled with our recent debt financing, we

have ample capacity to fund our new-build vessel commitments, pursue growth opportunities, and maintain a healthy dividend.” Cox added that Matson continues to be encouraged by their prospects in Hawaii and in a strengthening broader economy that will positively shape volume in their Jones Act trades and in logistics.

◆ **ISM report signals strong momentum.** The outlook for growth in both the manufacturing and non-manufacturing sectors for the remainder of 2014 can be described as “very good.” That’s the general thesis of the *Spring 2014 Semiannual Economic Forecast* issued by the Institute for Supply Management (ISM). For manufacturing, the ISM said that revenue is expected to increase 5.3 percent this year (up from 4.4 percent in December), capital expenditures are pegged at 10.3 percent (up from 8.0 percent), and capacity utilization is now at 82.3 percent (up from 80.3 percent). On the non-manufacturing side, revenue is expected to rise 2.7 percent through the rest of the year, with capital expenditures predicted to head up 10.8 percent (up from 4.6 percent in December). Non-manufacturing production capacity, or the capacity to produce products or provide services in this sector, is expected to head up 3.1 percent in 2014 compared to December’s prediction of 1.9 percent.

◆ **Big rate changes ahead for FedEx Ground.** Effective January 1, 2015, FedEx Ground, a unit of FedEx, will apply dimensional weight pricing to all shipments moved via FedEx Ground, as opposed to its current method of applying dimensional weight pricing to packages that measure three cubic feet or more. FedEx defines dimensional weight pricing as “a common industry practice that sets the transportation price based on package volume—the amount of space a package occupies in relation to its actual weight.” Jerry Hempstead, president of Orlando, Fla.-based parcel consultancy Hempstead Consulting, told *Logistics Management* that this is not a pricing change for the better for shippers. “Say you put 5 pounds in a box that is 3 cubic feet,” he said. “Today you get charged for 5 pounds, and January 1 you get charged for 32 pounds. Based on the new rule, a one-cubic-foot box, or a box

of 1,728 cubic inches, will be charged the greater of the actual weight or the dimensional weight, which in this case is 11 pounds.”

◆ **Decreasing pay day?** The Institute for Supply Management (ISM) released its *2014 Salary Survey* that revealed a decrease in salary for the members surveyed, and the fact that compensation was the most important factor for job candidates evaluating opportunities in the supply management industry. ISM’s ninth annual salary survey finds that the average base compensation for all participating supply management professionals was \$101,608, a decrease of 2 percent compared to the average for 2012 (\$103,793). A majority of respondents (62 percent) still received a bonus in 2013 (down from 68 percent in 2012). The median bonus was \$8,300, up 4 percent from 2012. The study showed that total compensation package that includes bonuses and stock options significantly increases pay.

◆ **Air up.** The International Air Transport Association (IATA) released data showing airfreight markets in March were up 5.9 percent compared to a year ago and capacity grew 3.4 percent. While this marks a significant improvement in volumes compared to March 2013, much of the growth took place in the final quarter of 2013. Since the beginning of the year, air cargo volumes have been basically flat. This plateau in volumes is consistent with the recent pause in improvements to business confidence and world trade. Business conditions in the U.S. and Europe, however, provide a reason to be cautiously optimistic for a resumption of growth in the months ahead. Rising export orders, in particular, are expected to give positive momentum to U.S. and European markets. But this is balanced against the impact of a slowdown in Chinese manufacturing, which is now into its fourth month.

◆ **Volatility in demand has become the norm.** In today’s business environment, companies remain “cautiously optimistic,” observes Ted Fernandez, chairman and CEO of global business advisory firm The Hackett Group. “Most companies in the S&P 500 beat their guidance for the first quarter,” he says. “But mixed guidance has

been the issue as companies continue to struggle to meet growth objectives.” Fernandez added that many companies have been quick to turn to productivity initiatives to hit earnings targets. “This should improve as the U.S. economy continues to show better signals, but for now there remains cautious optimism across the globe.” According to Fernandez, finding sustainable demand continues to be more challenging than expected as we now approach the 6th anniversary of the financial crisis. “Volatility in demand has become the norm, and companies understand that they need the ability to quickly recalibrate.”

◆ **Logistics deal activity starts year off at slower pace, says PwC.** The first quarter of 2014 did not pick up where the fourth quarter of 2013 left off when it comes to merger and acquisition activity in the transportation and logistics sectors, according to PwC’s report *Intersections: First Quarter 2014 Global Transportation and Logistics Industry Mergers and Acquisitions Analysis*. PwC reported that there were 37 deals worth \$50 million or more in the first quarter for a cumulative \$16.1 billion compared to the fourth quarter’s 75 deals representing a cumulative \$27.2 billion. And the first quarter was nearly even on an annual basis when stacked up against the first quarter of 2013, which saw 41 deals for a cumulative \$16.2 billion.

◆ **Hello ArcBest, Goodbye Arkansas Best.** Arkansas Best Corp., parent of 90-year-old ABF Freight System (the nation’s eighth largest LTL carrier) has changed its name to ArcBest Corp., effective May 1. Its stock symbol has changed from ABFS to ARCB. The Fort Smith, Ark.-based freight company also unveiled a new unified logo system for its various units. The company said that it was trying to “strengthen its identity as a holistic provider of transportation and logistics solutions” for its wide variety of customers. “This marks an exciting new era for our organization,” ArcBest President and CEO Judy McReynolds said. “The new name, logo system, and advertising campaign we are unveiling allow us to more clearly communicate our total value proposition to our customers, our employees, and our shareholders through one unified identity under the ArcBest umbrella.” □

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TRANSPORTATION BEST PRACTICES/TRENDS

2014 Rail/Intermodal Roundtable: Riding High

24 Through record-high investments and a keen focus on service, rail and intermodal providers are still delivering on their service promise to shippers—and doing it with improved efficiency. Our panel of top analysts takes a deep dive into what railroads are doing to stay lean and powerful during these still uncertain times.

WAREHOUSE/DC INNOVATION

5 ways to handle peak demand 30

The rise of e-commerce, more frequent promotions, and competitive service-level agreements are creating more peak periods than ever in the DC. Here's a look at five strategies companies are using to handle peak demand.

LOGISTICS AND SUPPLY CHAIN TECHNOLOGY

Software Users Survey: Caution lingers 36

Our new reader survey reveals a cautious approach to supply chain software investment and some lingering uncertainty over the place cloud computing will hold in the greater supply chain solution hierarchy.

GLOBAL LOGISTICS

2014 Cross-Border Roundtable: Building the future of hemispheric trade 40

Trade volumes between the U.S., Canada, and Mexico are massive and growing due in no small part to the fact that manufacturers now treat the continent as one seamless market for production and distribution. Our panelists offer insight into the bright outlook for hemispheric trade.

WAREHOUSE/DC OPERATIONS

RFID and the Supply Chain: Measured progress 44

The RFID market is showing signs of steady growth as companies work to achieve a meaningful return on investment in specific areas of given processes. We chart the technology's current and future progress.



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SPECIAL REPORT

Top 50 3PLs: Finding a healthy balance

Finding the right third-party logistics provider (3PL) always involves considerable due diligence, contend industry experts. But it may also mean leaving an existing partner for a set of collaborators that can deliver on the promise of a seamless global network. **48S**

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EDITORIAL OFFICE

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Breaking the rail myth

IN CASUAL CONVERSATION WITH FRIENDS, it surprises me how many myths still exist around moving freight by rail. "It must be slow, unmanageable, old fashioned." Rail seems to conjure memories of pillows of steam hovering over charming brick stations, or lonely whistles heard from a distant train snaking through the countryside.

As Pricing columnist Pete Moore points out this month, myths revolving around rail and rail intermodal are, surprisingly, still quite prevalent among logistics professionals as well. Following a recent encounter he had with a logistics executive from a brick manufacturing facility, it became clear that shippers envision intermodal as only ocean vans in 35-foot or 53-foot lengths. Or worse, they see rail as carload-only service that requires time-consuming transloading.

For shippers who still find themselves stuck in this rut, Moore offers practical tips (page 17) to consider when you decide to open your planning to, dare I say, one of the more dynamic modes *LM* has been covering over the past five years.

"Shippers need to realize that highway and rail—particularly for moves over 500 miles—are competitors, and for long distances highway carriers use intermodal as an alternative to sending drivers far from home base," says Moore. "There's little doubt that shippers can increase their flexibility, raise competition for their freight, and drastically cut costs when they fully understand how rail intermodal can work into their network."

Group News Editor Jeff Berman follows Moore's lead to further dispel the myths in his 2014 Rail/Intermodal Roundtable. As he has for the past six years, Berman has pulled together three top rail analysts to offer logistics professionals the ultimate update on the rails (page 24).

"More than any other modes, the railroad and intermodal sectors have shown impressive flexibility in being able to roll with the economic and demand trends

since the Great Depression," says Berman. "Volumes since that time have made steady annual gains and are on track to exceed pre-recession levels."

In fact, the first quarter intermodal volumes showed continued growth despite the grueling winter, while domestic containers have been historically impressive over the years, showing an eight-year cumulative average increase of 8.6 percent between 2005-2013.

Much of the success on the rails over this time is due in large part to the record high investment that the rail carriers continue to sink into equipment, infrastructure, and IT. According to the Association of American Railroads, the North American Class I carriers pledged to spend \$24.5 billion in 2013, with \$13 billion allocated to upgrade capacity. The result has been improved service levels, increased reliability, and efficiency levels that are helping to erase those bygone images of grit and steam.

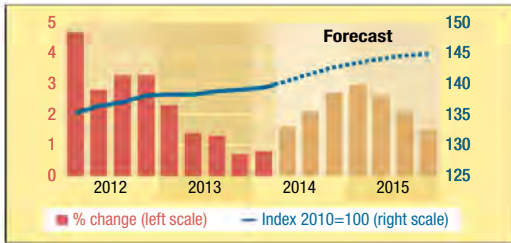
And while service progress has been impressive, Berman and panel point out that challenges such as the possibility of re-regulation, shipper pushback on rates, and complications from the influx of volume stemming from shale production and related products are all currently putting pressure on rail network performance.

"However, carriers continue to invest billions in infrastructure and new locomotives to add capacity and reduce bottle necks," adds panelist Bill Rennie, partner at Oliver Wyman. "So, long-term improvements should be expected despite the challenges."

Michael A. Levans, Group Editorial Director
Comments? E-mail me at mlevans@peerlessmedia.com
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price TRENDS

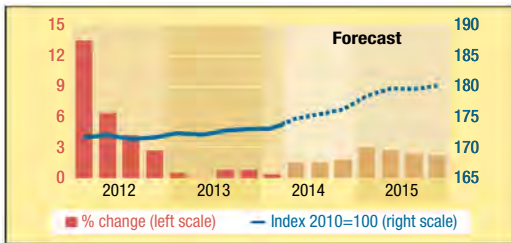
Pricing across the transportation modes



% CHANGE VS.:	1 month ago	6 mos. ago	1 yr. ago
General freight - local	0.0	0.0	0.0
TL	-0.1	1.7	1.3
LTL	1.6	2.2	5.2
Tanker & other specialized freight	-0.1	0.5	1.0

TRUCKING

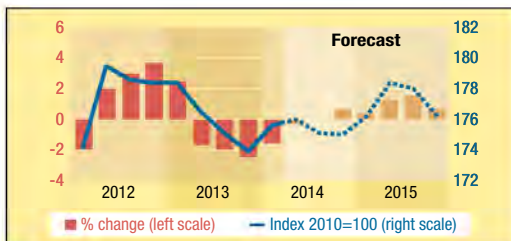
Trucking prices overall are traveling slowly on a calm and predictable route northward. Transaction prices for LTL service in April increased 1.6% from month-ago and 5.2% from same-month-year-ago levels. Truckload prices at the same time declined 0.1% from a month ago, but stood 1.3% higher than a year ago. To get a better sense of the trends, look at the latest year-over-year inflation figures. Here we see LTL tags accelerating at a 2.9% pace and TL increasing 0.3%. At the same time last year, inflation rates for LTL and TL had clocked at 5.4% and 2.9%, respectively. In 2014, average annual prices will be up 2.5% for LTL and 1.4% for TL. In 2015, tags will be up 3.1% for LTL and 1.8% for TL.



% CHANGE VS.:	1 month ago	6 mos. ago	1 yr. ago
Air freight on scheduled flights	-0.1	0.1	0.5
Air freight on chartered flights	-1.1	-2.5	7.0
Domestic air courier	0.2	4.1	2.9
International air courier	0.2	4.5	3.4

AIR

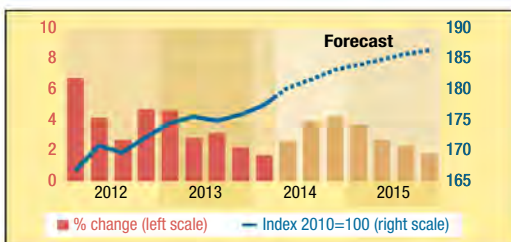
Although specific airliners have reported an encouraging increase in cargo-ton miles, the U.S. air cargo industry overall has been unable to push up transaction prices very far. In April, average prices for cargo on scheduled flights fell 0.1% and on non-scheduled flights dropped 1.1%. The year-over-year inflation rates for both these services have canceled each other out, with scheduled air cargo tags up 0.5% and nonscheduled down 0.5%. Global air cargo inflation rates, however, continue flying strong at a 6% pace or faster. U.S. freight forwarders reflect this reality with their year-over-year prices up 2.8%. Our forecast for air cargo prices (on scheduled flights) shows prices up 1.4% in 2014 and 2.6% in 2015.



% CHANGE VS.:	1 month ago	6 mos. ago	1 yr. ago
Deep sea freight	0.1	1.2	1.2
Coastal & intercoastal freight	0.0	3.4	4.7
Great Lakes/St. Lawrence Seaway	0.4	3.4	4.7
Inland water freight	0.1	1.3	0.7

WATER

With an inability to raise prices, rough seas continue for vessels operating on inland waterways. Indeed, inland waterway cargo prices in April dropped 9.7% from month-ago and sank 17.4% from same-month-year-ago levels. Mitigating the problem somewhat, prices for inland waterways towing increased 12.1% from a year ago. Year-over-year inflation trends paint a dismal picture, too. Inland waterway prices currently are declining at a 5.6% pace. That rivals the 7.6% deflation record set in April 2010. Great Lakes and St. Lawrence Seaway cargo ships have also seen year-over-year prices deflate at a 3.5% rate. Only deep-sea vessels have seen pricing strength, but even here prices are up only 0.7%.



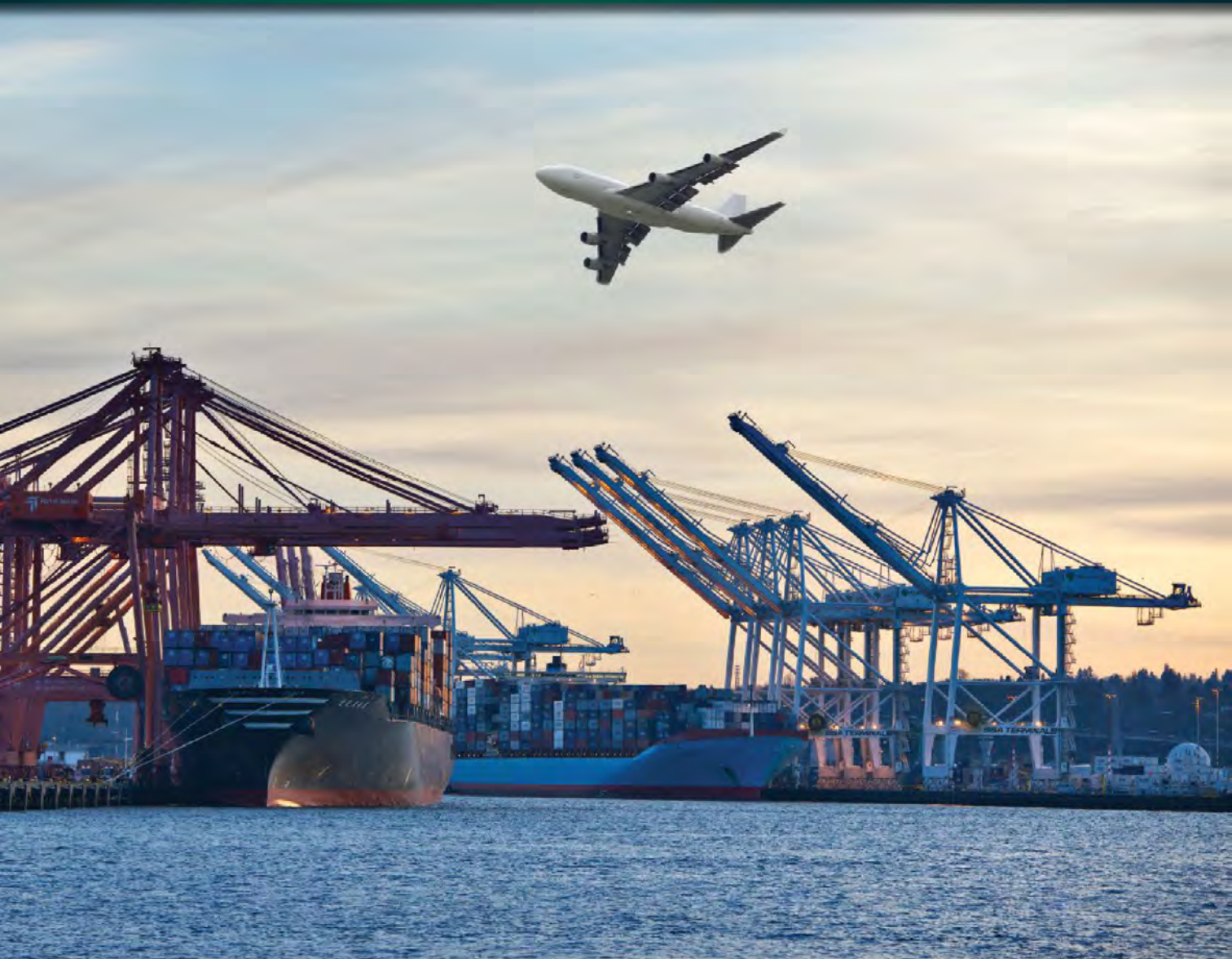
% CHANGE VS.:	1 month ago	6 mos. ago	1 yr. ago
Rail freight	0.1	1.2	1.2
Intermodal	0.0	3.4	4.7
Carload	0.4	3.4	4.7

RAIL

The rail transportation industry has enjoyed steady demand gains with carload freight traffic and intermodal freight traffic up 6.4% and 9%, respectively, from a year ago. Alas, the rail oligarchy has had to bend to the will of the today's low-inflation economy. In April, intermodal rail transaction prices declined 0.1% and carload tags increased 0.7% from a month ago. The year-over-year inflation rate for intermodal and carload rail services now stands at 2% and 2.2%, respectively. For the carload market, the current 2.2% rate is only half as big as the inflation rate that the industry won in 2013 and is more than six points lower than April 2012.

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- Non-union truckers brace for new NLRB rules allowing “ambush” union elections, Page 14
- Q1 intermodal volumes up despite weather challenges, Page 15

Supply chain stakeholders call on ILWU and PMA to reach a deal

The clock continues to tick as West Coast ports face risk of productivity issues and shippers dust off their contingency plans.

By Jeff Berman, Group News Editor

SAN FRANCISCO—Ahead of negotiations between the International Longshore and Warehouse Union (ILWU) and the Pacific Maritime Association (PMA), a letter sent to ILWU President Robert McEllrath and PMA Chairman and CEO James McKenna pleaded the case for the sides to come to an agreement ahead of the June 30 labor contract deadline for West Coast dockworkers.

More than 60 maritime and supply chain industry stakeholders contributed to the letter, including manufacturers, farmers, wholesalers, retailers, distributors, transportation and logistics services providers, as well as industry associations such as the National Retail Federation and the Airforwarders Association.

“We urge you to make every possible attempt to conclude an agreement on a new contract before the current year expires on June 30,” the letter stated. “It is critical that a new agreement be reached without disruptions to the movement of freight.”

The letter also noted that failure to reach an agreement would have a serious impact on the economy, with the potential for disruptions in the flow of com-

merce at West Coast ports, creating further uncertainty and forcing shippers to develop contingency plans—costly moves in terms of jobs and economic competitiveness. The letter also cited the 2002 West Coast work stoppage at ports that caused an estimated \$15 billion in reported losses.

The ILWU represents nearly 14,000 port workers in California, Oregon, and Washington. According to industry estimates, more than 40 percent of U.S. incoming container traffic moves through West Coast ports at the Ports

of Los Angeles and Long Beach.

ILWU president Bob McEllrath has told members to “hold the line” and encouraged them to propose strategies to address the challenges ahead, including jurisdiction efforts by the employers and other unions that “poach” Longshore jobs, increased employer and government pressure to cut benefits, and employer efforts to replace workers with new technology.

As for the PMA’s stance, a report in the *International Business Times* cited the PMA as pointing to lost market



share and the need to increase efficiency to maintain a competitive advantage against ports in Canada, Mexico, and the U.S.-based East and Gulf Coast ports.

The report added that the PMA claims annual earnings for full-time longshoremen average \$132,046 along with generous, no-deductible health benefits. The ILWU says that the current labor contract calls for \$35 per hour for the most experienced workers, or an annual salary of \$72,800 per year.

The specter of a possible West Coast port labor shutdown is keeping retail shippers attentive, forcing them to prepare for alternative outcomes depending on how long it takes for the PMA and ILWU to reach an accord.

In the meantime, the forecast for volumes at retail container ports in the coming months is largely positive, according to the monthly *Port Tracker* report issued by the NRF and maritime consultancy Hackett Associates. For May volumes, the report expects to see a 3.5 percent increase at 1.44 million twenty-foot equivalent units (TEU), with June and July expected to be up 5.6 percent and 3 percent, respectively.

Jonathan Gold, vice president for supply chain and customs policy at NRF, said that these negotiations are critical, with West Coast ports being such an important part of the global economy as

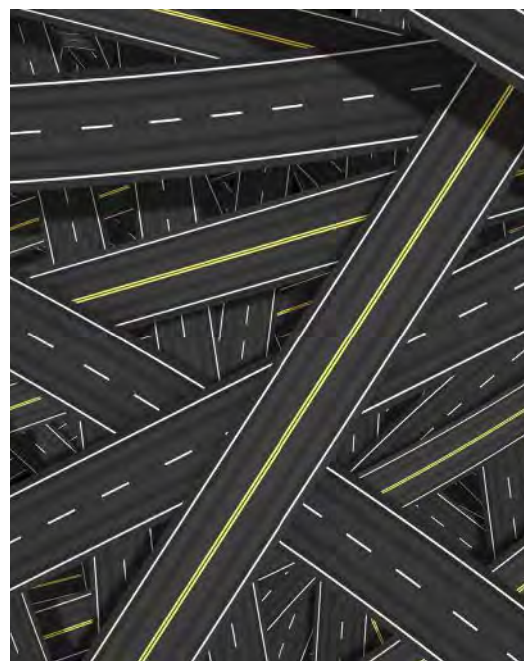
a gateway to Asia for import and export activity.

“If talks go only a couple days past the expiration of the contract, then shippers should be fine, but it could be a different story if things go longer as far as being able to get product to market,” said Gold.

As for contingency plans if negotiations go longer than expected, Gold said that one option for importers is to ship early so that there’s sufficient inventory on hand, although it comes with additional costs. Another option is shifting cargo to East and Gulf Coast ports as well as Canada and Mexico, with air cargo as an option for last minute orders.

Most larger shippers have already incurred costs for contingency planning by now, in some cases securing capacity on non-U.S. West Coast routes just in case of disruption this year, according to Paul Bingham, economics practice leader in the transportation division of consulting firm CDM Smith.

“Preparations among some shippers began many months ago knowing that negotiations this year could be challenging,” explained Bingham. “That basic step for many shippers was first to increase use of non-U.S. West Coast liner service with carriers in an attempt to assure space availability in the event of a disruption by having a preferred existing customer status.” □



So far that tapestry of ideas to replace the current two-year, \$109 billion “MAP-21” that expires Sept. 30 includes President Obama’s four-year, \$302 billion proposal of interstate tolling or a mileage-based revenue system to replace or supplement the federal fuel tax, and the Senate Environment and Public Works (EPW) Committee’s six-year proposal that keeps funding at the current levels—but with no specific way to pay for it.

Indeed, paying for the bill is a necessity. The Highway Trust Fund (HTF) is on track to be exhausted by August, when Congress will be on its six-week summer vacation. However, this wouldn’t be the first time this has happened. Since 2008, the General Fund of the U.S. Treasury has bailed out the HTF to the tune of about \$54 billion, and it’s likely to do the same late this summer.

Some 87 percent of the HTF comes from the federal tax on fuel—18.4 cents on gasoline, 24.4 cents on diesel. These amounts have remained unchanged since 1993. Truckers have been openly pleading with Congress to raise the fuel tax, partially because it’s commonly called an “Ex-Lax” tax by truckers—because it’s easily passed on to shippers.

Sen. Carper is proposing to restore the buying power of the federal fuel tax to where it was 21 years ago and then indexing it to inflation. He’s calling for a 3-cent

INFRASTRUCTURE

Congestion Ahead: Merging disparate transportation bills into a well-funded solution

WASHINGTON, D.C.—Washington has a problem. It needs to produce a fully funded, multi-year surface transportation bill and find a way to pay for it in an election year before the end of September.

Even senators involved in the sausage-making exercise known as “lawmaking” are skeptical of being able to produce such legislation on a tight deadline.

According to Sen. Roy Blunt (R-Mo.), a member of the Senate Commerce Committee’s Surface Transportation and Merchant Marine Infrastructure, Safety and Security subcommittee: “In the Senate today, I am hesitant to use the words ‘produce legislation.’”

Blunt spoke at an “Infrastructure Week” event coordinated by the American Trucking Associations (ATA) at its Capitol Hill office last month. However, other senators were slightly more optimistic during the event.

Sen. Tom Carper (D-Del.), chairman of the Senate Environment and Public Works Committee’s Transportation and Infrastructure subcommittee, said that there were “all kinds of ideas” floating around Capitol Hill on infrastructure. “There is no silver bullet, but maybe there are some silver BBs,” Carper said. “Maybe we could put together a tapestry of ideas.”

to 4-cent increase annually for four years to restore the tax's effective buying power. That's considered a long shot in an election year, but remains unbowed.

"We have to figure out the right thing to do, not the most expedient thing," Carper said, adding that even some Republicans like his idea. "If I had said that six months ago they would have thrown me out of the room. I mentioned it a few weeks ago, and they didn't."

Then, there's the idea of tolling. Putting tolls on the existing free lanes of 50,000 miles of the interstate system could provide more than \$50 billion annually; however, that proposal faces stiff headwinds.

Trucking interests much prefer the tax hike to increased tolling. Phil Byrd, president and CEO of Bulldog Hiway Express and ATA chairman, said truckers

are against tolls on existing interstates for three reasons: Those highways already have been built and paid for; it's effectively double taxation; and tolls are inefficient, with overhead consuming as much as 25 percent of overall revenue.

In one of the few instances where big trucking companies and independent owner-operators agree, the Owner Operator Independent Drivers Association (OOIDA) blasted the Obama administration's tolling proposal. OOIDA called it a "negative provision" that would create a "patchwork" of state-controlled toll roads in place of a unified Interstate system.

"Any proposal that moves away from a user-fee funded transportation system is not going to be acceptable to the American trucking industry—period," ATA President and CEO Bill Graves said.

—John D. Schulz, *Contributing Editor*

employee education.

The proposal is backed by three of the five NLRB board members, including Chairman Mark Gaston Pearce. The proposal is angering so many businesses that a coalition of 141 businesses groups, including the American Trucking Associations (ATA), has been formed to oppose or at least delay it. The proposal has drawn in excess of 75,000 public comments filed at the agency.

"These are modest, common sense changes that preserve due process and strengthen the secret ballot process," said Teamsters President James Hoffa in the union's comments. "They update election methods so they are compatible with today's technology."

Representing the pro-business viewpoint, ATA General Counsel Prasad Sharma said in his comments: "The board's proposed rule represents a results-oriented tipping of the balance of employer and employee interests in favor of the unions that contravenes the direction set forth by Congress in the National Labor Relations Act and that addresses too sweepingly an alleged problem in an area where the board has consistently met its targets."

Currently, unionized truckers—mainly belonging to the Teamsters—amount to about 5 percent of the 700,000 employees at the trucking companies registered at the Department of Transportation.

That figure is down from around 90 percent prior to the Motor Carrier Act of 1980 that economically deregulated the industry.

Originally proposed in 2011, the NLRB rules in question were reintroduced earlier this year. They're designed to reduce the amount of time between when a union-organizing petition is filed and when an actual vote takes place.

One of the key components of the new rule is timing. Previously, the old rules relating to conducting union organizing elections said an election should be held within a 42-day window from when the petition is filed to when the election is held.

The new rule speeds up that process. It says: "The regional (NLRB)

LABOR REGULATION

Non-union truckers brace for new NLRB rules allowing "ambush" union elections

WASHINGTON—The National Labor Relations Board (NLRB) is in the final step of issuing contentious, labor-friendly regulations that would create sweeping changes to the way the union organizing elections are held.

Non-union trucking companies, such as FedEx and others, say that these regulations would amount to what they're calling "Ambush Election Rules." If adopted, the rules would:

- Reduce the time from petition to election day from the current target time of 42 days to as few as 19 days or less.
- Require employers to divulge much more personal information about voters such as personal phone numbers and e-mail addresses.
- Require employers to make important decisions about who should be able to vote in elections in very short periods of time.
- Remove the right of parties to challenge decisions about who

is eligible to vote until after the election is held.

These so-called "quickie" elections are seen as biased against employers, who would have much less time to fight back against union organizing efforts through



director shall schedule the election for the earliest day practicable consistent with these rules.” Non-union truckers say this is unfair, and makes it virtually impossible for carriers to fight back against union organizing efforts.

“In my opinion, these rules are all about keeping employees from getting accurate information,” said Doug Topolski, a labor and employment attorney with Ogletree Deakins, a law firm in Washington, D.C.

Topolski added that due to mandatory procedures involved, the likely effect would be to reduce typical election times from the current 42 days to about half that. “Ambush elections can happen just that quickly, he said.”

—John D. Schulz, Contributing Editor

INTERMODAL

Q1 intermodal volumes up despite weather challenges

CALVERTON, Md.—First quarter intermodal volumes showed growth in spite of challenging winter weather conditions, according to the Intermodal Market Trends & Statistics Report released by the Intermodal Association of North America (IANA).

Total intermodal volume movements were up 2.6 percent compared to the first quarter of 2013. But unlike the previous six quarters, first quarter growth came with a twist: Trailers’ growth rate at 7.5 percent topped domestic containers, which grew 3.2 percent annually.

Domestic containers, said IANA, have been historically impressive over the years, with an 8-year cumulative average increase of 8.6 percent between 2005-2013, including the 2009 economic downturn. IANA reports that the first quarter’s 3.2 percent annual gain is the lowest growth rate since 2009.

“The weather deterred a good amount of economic activity, while employment, retail sales, and many other economic indicators struggled

throughout the first several months of the year, potentially holding down the growth of domestic container volumes,” stated the report.

Conversely, this led to increased trailer activity, with IANA explaining that the

weather may have also played a major role in the outsized growth in trailer shipments. Trailer usage grew 15 percent and 24 percent, respectively, in the Northeast and Eastern Canada.

—Jeff Berman, Group News Editor



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Pondering the state of the economy

ARE THINGS REALLY WHAT THEY SEEM when we look at how the economy currently stands? Given what we have seen and experienced in recent years, it's a valid question.

Why? Well, for one thing, many economic metrics suggest that this recovery is different than others, and unlike years past, there seems to be more momentum this year, and a "second-half swoon" may not occur as it has over the past couple.

But before anyone gets too excited about what the current trend lines might suggest, let's keep in mind that the first quarter preliminary GDP estimate from the United States Department of Commerce barely pushed the needle at 0.1 percent growth. However, we need to consider the role that one of the worst winters in recorded history played in establishing that paltry number.

And while GDP was down, the unemployment rate dropped to 6.3 percent, which is a respectable figure to be sure, especially considering where it was not that long ago. Yet that drop in unemployment comes with the caveat: the number of people in the labor force actually dropped by 860,000. Even so, it's still more of a positive than a negative when assessing where things stand.

Other mainstream economic metrics provide some cause for optimism, too, with retail sales showing steady growth and the fact that U.S. consumer confidence is approaching pre-recession levels, according to the recent Nielsen Global Consumer Confidence Index.

This recent index made the case for better times ahead for the U.S. economy based on the following points: an increase in consumers putting more money

Growth in employment and manufacturing in some key sectors such as construction and motor vehicles is an indicator that the economy is strengthening.

into savings accounts; a decline in unemployment numbers; and increasing equity and home prices. Nielsen noted that continued consumer confidence will be contingent on further gains in the labor and housing markets, along with a continued sound economic policy.

To be sure, what's happening in the mainstream economic front has a direct correlation to the freight economy front—although there have been times in recent years where there have been disconnects.

In the most recent edition of the *Cass Freight Index Report*, Rosalyn Wilson, senior business analyst with Delcan Corp. and author of the *Annual CSCMP State of Logistics* report, observed that despite the tough winter and minimal first quarter GDP number, freight volumes are set to expand.

"Growth in employment and manufacturing in some key sectors such as construction and motor vehicles is an indicator that the economy is strengthening," Wilson wrote. "The fast-paced expansion from the first quarter should settle into moderate growth in the second quarter."

Those are some encouraging thoughts to chew on from someone who knows her stuff. While things are far from perfect, it will be interesting to see how things shake out as we approach the second half and beyond.

Will we see yet another economic head fake? Or will we see the semblance of truly steady and secular growth? It's still too early to tell, but at least there are more positive signs flashing than we've seen at this time in years past. □



Peter Moore is Adjunct Professor of Supply Chain at the University of Denver Daniels School of Business, Program Faculty at the Center for Executive Education at the University of Tennessee, and Adjunct Professor at the University of South Carolina Beaufort. Peter writes from his home in Hilton Head Island, S.C., and can be reached at peter.moore@du.edu.



Breaking the rail intermodal myth

I JOINED MY SON AT HIS CHURCH LAST WEEK and happened to meet a senior executive from a brick manufacturing company. When this gentleman learned of my logistics background, he asked if I knew anyone who had flatbed trucks.

His transportation team was projecting a shortage of “hundreds” of trucks in the coming weeks. He told me that the team was using “load board” sites and working the phones to get individual trucks to take loads. Then we commiserated about the “cowboy” image of flatbed operators and the lack of a large flatbed carrier the he could partner with to set up a comprehensive contract.

I asked him if the transportation team looked at soft-side highway vans and intermodal as alternatives. He was aware of the first, but surprised me by stating: “Railroads are just unreliable, so we stopped shipping rail years ago.”

I knew at once that he was referring to traditional rail operations in large flatbed railcars. I spoke with him about intermodal, schedules, and their improved reliability. I assured him that there are soft-side intermodal containers as well.

“The flatbeds or soft-sides are needed because the receivers often have to unload from the side from the ground at construction sites and storage yards,” I told him. He thanked me and he left with a number of questions for his transportation team.

This encounter reminded me that many myths still exist about intermodal rail. Some shippers see intermodal as only ocean vans in 35-foot to 53-foot lengths. Worse, some are still picturing rail as carload service requiring transloading.

Shippers need to realize that highway and rail—particularly for moves over 500 miles—are competitors, and for long distances highway carriers themselves use intermodal rail as an alternative to sending drivers far from home base.

The need for flatbed or side-loading service raises some questions about equipment options for intermodal

The need for flatbed or side-loading service raises some questions about equipment options for intermodal shippers. For many years these have been obtainable in limited quantities and little known.

shippers. For many years these have been obtainable in limited quantities and little known.

As intermodal becomes more integrated with highway, the alternate equipment types will become more readily available. Shippers with the need for specialized trailers, tanks, and heavy equipment carriage can then feel confident of having a competitor in over-the-road to call for large volumes of product needing special equipment.

When looking at intermodal options, shippers need to do some research into several factors that will drive cost and service. Here are three key factors to consider.

First, what lanes of traffic are a good fit for both you and the provider? Can they integrate your traffic into their network? Do they have customers with a need for similar equipment in the opposite direction? Can they meet your delivery service requirements?

Second, is the equipment available nearby or can it be? Which intermodal yards are close by and do they have capacity for your business?

Third, after the equipment questions are answered and service seems acceptable, what is the cost? Intermodal often compares well with highway, and the regularity of train schedules is a nice juxtaposition to “cowboy” flatbed operations.

Shippers can increase their options and raise competition for their freight by thinking outside the box—or in this case, outside the flatbed. □



Mark Pearson is the managing director of Accenture's Supply Chain Management practice. He has worked in supply chain for more than 20 years and has extensive international experience, particularly in Europe, Asia, and Russia. Based in Munich, Mark can be reached at mark.h.pearson@accenture.com



Entrepreneurial thought for logistics and supply chain managers

MANY LOGISTICS AND SUPPLY CHAIN EXECUTIVES bemoan the fact that their people aren't generating enough new ideas. However, often the fault lies with the companies themselves. Comfortably nestled inside the box, most organizations don't work hard enough to nurture and support entrepreneurialism and innovation. According to an Accenture study, tons of ideas are floating around a typical company.

The current digital revolution in business makes entrepreneurial thought—and action—doubly important. Not long ago, competitors had time to fashion responses to competitors' introduction of a truly new product, process, or service.

Film photography saw digital coming for years. Today, however, new digitally empowered business models can be catastrophic for incumbents because there is so little time to react. Eighteen months after Google launched Google Maps Navigation, the GPS device market had lost up to 85 percent of its market cap.

So, what can companies do to foster and accelerate innovation? A good place to start is define what you want. Most employee-generated ideas probably

shouldn't grow legs: too narrow, insufficiently relevant, or maybe too internally focused. Thus a critical need is helping employees create ideas that align with the company's strategic goals.

Out-of-the-box thinking in supply chain management is a great example. Re-conceptualizing third-party

Re-conceptualizing third-party relationships, launching collaborative design and manufacturing initiatives, and developing flexible capacity and flexible pricing programs can be just as rewarding as creating breakthrough products.

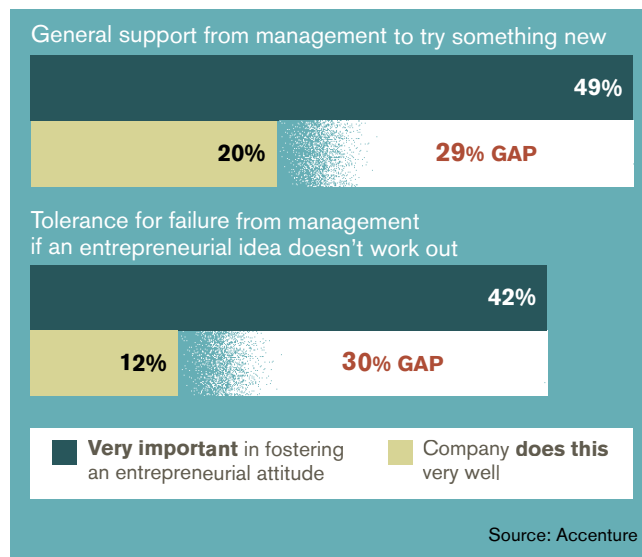
relationships, launching collaborative design and manufacturing initiatives, and developing flexible capacity and flexible pricing programs can be just as rewarding as creating breakthrough products.

Unfortunately, a recent Accenture survey of 519 vice presidents, directors, and managers at large U.S., U.K., and French firms reveals that investing in new process and business models has fallen by more than 10 percent in the last three years.

Companies also need to cast a wider net. More than half the aforementioned survey population believe that their company does not support ideas from all levels of the workforce. The implication is that leadership thinks good ideas come solely from business decision makers and that rank and file employees have little to contribute.

Another innovation key is to make time for innovation. When asked to identify the biggest barrier to entrepreneurialism, survey respondents were most likely to say they're too busy to pursue new ideas.

How have some of the world's most innovative companies fixed this problem? Gmail and AdSense were partly the result of Google's decision to let employees spend up to 20 percent of their time working on pet projects. And 3M allows employees to spend 15 percent of their



time on projects and research that go beyond their core responsibilities, which is when multilayer optical films and silicon adhesive systems for transdermal drug delivery were created.

To really encourage innovation, it may be necessary to rethink your schedule. Consider three widely accepted determinants of success: achieving measurable financial gain, helping the company run more efficiently, and improving the company's competitive position.

Most respondents said that their company allocates six months or less to determine if an idea has been successful. This is far too little time to fully implement and measure the success of ideas focused on the above-three determinants.

Accenture research confirms that truly entrepreneurial companies differ from their more-traditional brethren in at least two areas: the former reward effort and accept failure.

More than 25 percent of survey respondents said they've avoided pursuing an idea due to concerns about negative consequences, and more than 75 percent say their company rewards an idea only if it works. Companies clearly could benefit by incentivizing risk taking and rewarding efforts—not just outcomes. Although 42 percent of respondents think tolerance of failure from management is very important, only about 12 percent think their company really is tolerant.

Perhaps most important, companies need to develop a mechanism for running with big ideas. One way to do this is to create a model for corporate entrepreneurialism built on a push-pull cycle of input from corporate and output of incentives for employees:

- **Push:** Encourage senior management to incorporate appropriate levels of risk and tolerance of failure within business units; create programs to promote the company's entrepreneurial culture and clarify the rules of the game for employees; implement processes and infrastructures to enable collaborative idea generation.

- **Pull:** Implement clear incentive policies that offer rewards for idea generation, not just successful implementation; establish a process by which business cases for new ideas can be validated,

accelerated or shut down; create an internal ecosystem that includes mentors, outside business angels and venture capital expertise to accelerate assessment and commercialization.

Fostering entrepreneurialism and innovation doesn't require an overhaul

of internal processes. But it may necessitate a delicate balance that most companies have yet to strike: avoid dampening entrepreneurial spirit on the one hand, but refine the ability to aggressively cull low-potential ideas and run like the wind with potential winners. □

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Derik Andreoli, Ph.D.c.
is the Senior Analyst at
Mercator International, LLC.
He welcomes any comments
or questions and can be
contacted at dandreoli@mercatorintl.com.



Natural gas prices to climb, but NGV conversion still makes sense

AN ANALYSIS OF NATURAL GAS STORAGE volumes strongly suggests that natural gas prices will rise significantly towards the end of the year; and as they rise, so too will the price for CNG and LNG.

Depending on how the diesel market develops, the price differential between CNG/LNG and diesel could narrow significantly. If you're considering converting all or part of your fleet to run on natural gas, you need to understand the pressures that will likely push the price of natural gas up and the differential between CNG/LNG and diesel down.

U.S. natural gas inventories are cyclical—they decline through the late fall and winter only to rise again through the rest of the year. In the last 10 years, the volume of natural gas in storage at the beginning of the winter draw-down season has averaged 3.62 trillion cubic feet (tcf) and the draw-down season has not begun below 3.28 tcf.

Through the colder months, an average of 2.05 tcf is pulled from the inventory, and an equivalent amount is typically pumped into the salt caverns for storage through the more temperate seasons. This last draw-down season was plagued by particularly intense periods of cold weather and heavy snow, and as a consequence, the natural gas draw-down rate was higher than at any other period since 1994, which is when the Energy Information Administration (EIA) began recording these numbers. To be precise, nearly 3.0 tcf of natural gas was pulled from storage over the 19-week draw, causing storage volumes to fall from approximately 3.79 tcf to just 0.82 tcf.

Consequently, when we entered the current build period, volumes were approximately half of typical trough level. In order to climb back to 3.62 tcf, weekly growth rates will need to be far above historic norms. On average, the build period lasts 34 weeks, and is itself cyclical. On a week-by-week basis, volumes grow most quickly in the spring and fall, but grow more slowly in the summer due to high electricity demand for air conditioning.

At the time of writing, natural gas inventories have been climbing for six weeks. In relative terms, if this build season is of average length, nearly 20 percent of the build season has already passed. As mentioned above, inventories started at 0.82 tcf, and, over the previous six weeks, inventories have increased by 0.34 tcf and now sit at 1.16 tcf—a number still well below the normal trough.

If on a week-by-week basis the build continues at a rate equal to the median achieved over the prior decade, it

will still be another four weeks before storage levels climb back to the normal volume from which the build starts. Of course, by that time, there will only be 23 weeks remaining during the build period, assuming again that this build period is of average duration.

The maximum number of build weeks was just 38, so at most we might expect to have 27 weeks of build remaining at this point. This equates to 20 percent fewer weeks to rebuild inventories from the normal cyclical low.

In order to build inventories back to the normal volume at the beginning of draw-down season—3.62 tcf—the volume added each and every week through the middle of October would have to be equal to the maximum of the weekly additions realized over the last ten years. In other words, every week between now and then would have to be “the best week ever.”

Given that only one of the prior six weeks bested the previous 10-year maximum, it seems unlikely that such

“If you’re considering converting all or part of your fleet to run on natural gas, you need to understand the pressures that will likely push the price of natural gas up and the differential between CNG/LNG and diesel down.”

a performance will be achieved. In fact, net additions this past week—week-six of the build period—were at a 10-year high on paper only. The EIA revised the definition of “working gas” in the most recent storage report, and if it were not for the increase in storage (8 bcf) from this reclassification, a new week-six high wouldn't have been reached.

If, on the other hand, storage volumes grow each week at the median level achieved over the previous decade, we would expect the volume in storage to climb to a cyclical high of 3.01 tcf. Thus if there is a reversion to the mean, the next draw-down season will begin with storage at a level that is roughly 17 percent below the average starting volume and more than 8 percent below the previous low.

So, what might we expect from the build season this year? In order to achieve a maximum build, a few forces would need to align to a significant degree.

Withdrawals during the build season would need to be on the low side of normal, and the number of new wells drilled would need to be relatively high. On average, new wells drilled today would need to be at least as productive

as the average well drilled in previous years. With regard to drilling rates, there are, in fact, nearly 10 percent fewer rigs drilling today (326) than there were at this time one year ago (354). By comparison, and for perspective, there were 1,606 natural gas drilling rigs in operation at the peak back in 2008.

While the number of wells has been declining, well productivity (the amount of natural gas produced per well) continues to increase. In the Marcellus shale formation, productivity increased 12 percent over the last seven months, rising from 5.8 million to 6.5 million cubic feet per day (mcf/d) per well. Moreover, an increasing amount of natural gas is being produced from fracked oil wells, especially in Texas.

On the other hand, fracked gas and oil wells have both high initial flow rates and very high decline rates. Consequently, a growing percentage of new oil and gas production simply counters declines in legacy wells where production is declining rapidly.

In short, the number of wells drilled remains low, and increases in productivity are being more than offset by rising legacy declines such that the rate of growth of production is slowing in what is by far the largest shale gas producing region—and a similar process is occurring in nearly all shale gas plays.

On the other side of the supply/demand coin, low prices and increasingly onerous EPA mandates have led to a situation in which coal plants are being retired, and a growing percentage of the country's electricity needs are being met by natural gas.

Given these forces, it seems increasingly unlikely that storage volumes will rise to the normal range for pre-winter cyclical highs before the build season comes to an end. At some point, traders will see the writing on the wall and will bid prices up. It's unclear how high, but there is certainly potential for prices to rise significantly higher than the current price of \$4.50 per BTU.

Of course, if you are running a fleet on natural gas, or are thinking about doing so, it's important to account for the fact that the commodity price currently comprises only around 25 percent to 35 percent of the final price of CNG. Consequently, even if the commodity price were to rise 50 percent, the price for CNG would only

increase by 11 percent to 14 percent, or by \$0.33 per diesel gallon equivalent.

This is significant, but to determine just how significant would require some knowledge about where diesel prices might be headed. CNG may still be com-

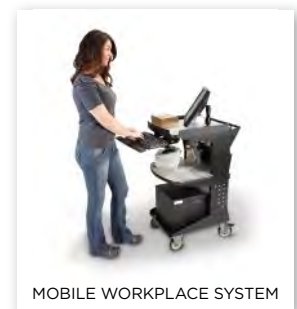
petitive even if diesel prices remain flat, but this would depend on the fleet, route, and refueling specifics. If you are considering conversion and have questions, please don't hesitate to send an e-mail my way. □



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Financial distress in container shipping industry rises for third straight year

Continued sluggish demand, a growing mountain of debt, and a radically changing global marketplace has the ocean container shipping industry reeling, say financial analysts.

SUPPLY CHAIN MANAGERS ARE JUSTIFIABLY CONCERNED about the recent consolidation of ocean carrier services, but an even greater threat to their operations may be lurking ahead. According to a new AlixPartners study, many of the major international players face more financial distress—even possible bankruptcy.

Esben Christensen, director of the business advisory firm, says that listed companies have been troubled for the past three years.

“Our analysis suggests that the number of parties controlling containerized transportation on critical trades is shrinking through operational alliances and—potentially in the future—through carriers exiting the business,” he says.

Contributing mightily to this situation, says the study, is a so-so global economy that still hasn’t bounced back from the downturn following the worldwide financial crisis of 2008-2009 the way other post-recession economies have in the past. However, the study also points to several structural issues also buffeting the industry. These include a drive to build “mega vessels,” and fill key trade lanes with these new ships. This represents a trend that over the past decade has steadily increased leverage across the industry and has left it with an average EBITDA interest-coverage rate of just 4.9. This is less than half the rate it was in 2011 (10.8) and less than a third of what it was in 2010 (15.0).

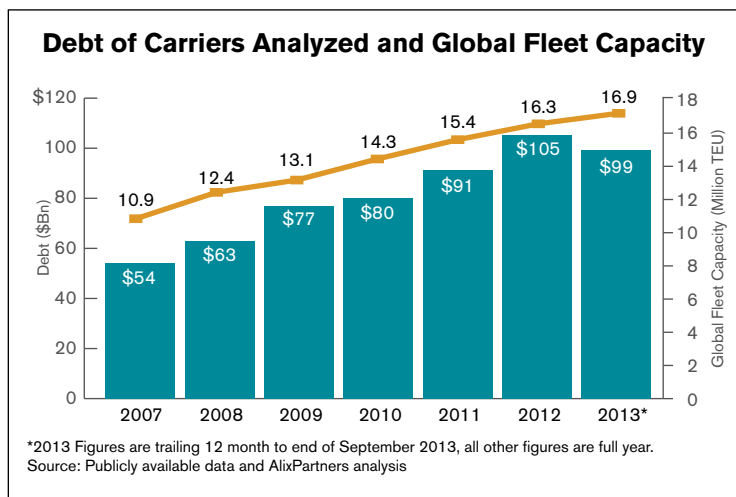
The study notes, too, that while global fleet capacity in the industry has risen steadily in the past decade, to 16.9 million TEU (twenty-foot

equivalent unit) for the 12-month period ending September 2013, up from 16.3 million TEU in 2012 and from 10.9 TEU in 2007, that capacity is a long way from being totally utilized. This has led to more alliances in the industry and will likely create an environment of haves and have-nots where smaller carriers will face some hard choices in the future.

Structural changes

On top of all that, the study asserts that other structural changes that will challenge companies this year include changing trade routes in some parts of the world, with cost increasingly trumping transit time, and a newfound pressure on the part of some of the stronger lines to squeeze, or even totally bypass, non-vessel-operating common carriers (NVOCCs), giving those lines more advantage over the have-nots of the industry.

“The container shipping industry as a whole con-



tinues to face stiff challenges, and for many companies in the industry those challenges could be existential if not addressed,” says Lisa Donahue, managing director and global head of Turnaround and Restructuring Services at AlixPartners. “These challenges also have, and will continue to have, a big effect on shippers and investors as well.”

There’s likely to be even more disruption in the ocean cargo carrier arena.

For shippers, the study recommends closely monitoring the financial health of the carrier base, not “over-consolidating” the carrier base (so as to have alternatives should markets brighten), considering index-linked contract options, and benchmarking rates and service levels via objective third-party resources. For investors, the study recommends paying close attention to the widening chasm between the leaders and the laggards, and working with experts to determine which com-

panies have viability and which may not—while also keeping an eye out for attractive asset sales, as many lines may move to divest themselves of assets, especially non-core ones, in the future. Meanwhile, for carriers themselves the study recommends divesting non-core assets, exiting unprofitable trades, adopting a laser-like focus on cost control, reassessing all value propositions, and partnering where partnering makes sense.

“For all the challenges facing all of the players in the container shipping industry today, there are also a lot of opportunities, including the promise of the much greater profitability that a streamlined, resilient industry might bring, as has been the case in many other industries,” says Donahue. “But to make the most of those opportunities will take insightful analysis and then firm, decisive action. It’s been done in other industries, and it can be done in this one as well.” □

Supply chain implications

In an exclusive interview, *Logistics Management (LM)* asked AlixPartner’s Esben Christensen for a few more details on supply chain implications.

LM: Do you anticipate any sudden shift in rates?

Esben Christensen: AlixPartners’ analysis suggests that the number of parties controlling containerized transportation on critical trades is shrinking through operational alliances and—potentially in the future—through carriers exiting the business. This would have a profound impact on the supply chain managers who rely on these services, in that the consolidation often brings with it less choice and higher prices. In the longer term, however, the change that’s on the horizon could be largely positive for the carriers who survive with more efficient ships and greater pricing power. In the shorter term, though, shippers should probably expect rates to remain at low levels as the market sorts out all of these changes.

LM: How should logistics managers mitigate risk?

Christensen: The report suggests that logistics managers can mitigate the risks related to financial distress amongst the carriers by closely monitoring the health of their providers, contracting with groups

of carriers representing diverse alliances (as opposed to over-consolidating their volume with just a few carriers or alliances), and keeping at least one non-vessel operating common carrier in their provider base. In the shorter term, these important steps should help allow supply chain managers to proactively direct their volume to healthy and stable partners, sustain a disruption without it reaching catastrophic scale, and tap extra capacity as need dictates to address contingencies. In the longer term, savvy logistics managers should probably also consider the merits of index-linked contracts that could protect them against wild price movements.

LM: Finally, will the financial distress in the container shipping industry lead to greater reliance on air cargo, even though it’s more expensive?

Christensen: Probably not in a structural sense. There may be some freight that moves to air to compensate for disruptions, but our study does not anticipate a reversal of the long-term trend of air cargo moving to slower, cheaper modes. Rather, in the longer term it is likely that more container capacity in fewer hands will lead to more reliable sailing schedules, which, in turn, could bite further into the air cargo volume.

2014 RAIL/INTERMODAL ROUNDTABLE

Riding high

Through record-high investments and a keen focus on service, rail and intermodal providers are still delivering on their service promise to shippers—and doing it with improved efficiency. Our panel of top analysts takes a deep dive into what railroads are doing to stay lean and powerful during these still uncertain times.

BY **JEFF BERMAN**, GROUP NEWS EDITOR

Perhaps more than other modes, the railroad and intermodal sectors have shown impressive flexibility in being able to roll with the economic changes and demand trends since the depths of the Great Recession. And since that time, the modes have made steady annual gains and are on track to meet or exceed pre-recession volumes on the intermodal side—with carload volumes not that far behind.

And amid a flurry of concerns over the regulatory framework of the industry as well as safety, the railroads continue to do their part, making annual capital investments into their infrastructure and networks to meet shipper objectives for things like improved transit times and increased efficiency.

In the midst of this continued progress, railroad carriers still face an array of challenges, including the possibility of re-regulation and increasing pushback from shippers that are less than pleased with rates.

To help put these vital modes into perspective, *Logistics Management* is joined by three of the nation's foremost railroad and intermodal experts to explain the current market outlook. Our panelists include Brooks Bentz, partner in Accenture's Supply Chain Practice; Tony Hatch, rail analyst and principal of ABH Consulting; and Bill Rennieke, partner at Oliver Wyman, a Boston-based management consultancy.



Logistics Management (LM): *What's your take on the current state of the railroad and intermodal markets?*

Bill Rennie: Underlying demand is strong, but still recovering from this past winter and the weather-related service issues and bottlenecks. The recent Surface Transportation Board (STB) hearing suggested that the service issues should be worked out by early June, with service levels improving. In the meantime, record agricultural loadings and strong crude-by-rail (CBR) will provide growth in carload and domestic containerization along with modest international flows.

Brooks Bentz: I'll add that the luxury of fluidity in the network that resulted from the recession has disappeared in a number of areas, which is having an impact on network performance, creating congestion, and otherwise disrupting service. As Bill mentions, this has been exacerbated by a harsh winter, so maintaining adequate schedule reliability is proving increasingly difficult. Further complications have arisen from the large influx of volume stemming from shale field production and related traffic.

Traffic such as 'frac' sand, pipe, and drilling fluids has had a more than insignificant impact on rail service, particularly

in the West. So, despite very large infusions of capital for expanding infrastructure, it's becoming progressively more difficult to keep pace with growth. Our thesis has been that productivity improvements need to be generated in new ways, and that "Next Gen" productivity gains will be heavily influenced and driven by technology, in addition to the more traditional means.

Tony Hatch: As Bill and Brooks both emphasize, the demand is clearly there, and the secular trends—oil prices, driver shortage, the state of the highway versus rail networks—remain the same. However, the recent service issues at Chicago, the world's rail hub, and in North Dakota have put a near-term damper on things.

It's important to keep in mind that the service issues aren't permanent. They reflect a combination of across the board growth from coal, grain, carload, intermodal, and the new CBR business combined with a record bad winter all focused around the northern Midwest.

LM: *Year-to-date carload volumes show slight growth and have yet to catch up to pre-recession levels. Overall, are things moving in the right direction for carloads?*

Bentz: Carload volume seems to be doing just fine. Growth seems to be present in a number of key areas, such as automotive and the above-mentioned commodities relating to energy production. Also, a good amount of air traffic is shifting to ocean, so over-the-road freight will gradually shift back to carload in certain markets to offset increasing costs of highway transport and the delay time incurred with congestion in major markets. It just won't be as fast a shift.

Hatch: Coal has taken a secular hit as new natural gas opportunities and, even more importantly, new regulations have driven down utility coal, the former base-load commodity. That business won't ever fully come back, and rails have shown real flexibility in moving past the coal age.

Rennicke: Indeed, we see several sources of growth that should gradually increase carload traffic. Building materials show some strength in regional markets, and chemicals join CBR for further support. As Tony touched on, the severe winter had run down coal piles at utilities, with many at inventory levels of less than 100 days. But I suggest we look for increased coal volume as inventories are built back up.

LM: *Intermodal is having another strong year, especially on the domestic side, and continues to outpace carload volumes. How sustainable is the ongoing strength of intermodal?*

Hatch: It's very sustainable, more demonstrably so after the service recovers—and it's recovering on a daily basis with the improved weather.

Rennicke: I agree. As intermodal gains volume and density, service frequencies improve and departure options increase. The combination of these factors should continue the

strong support of domestic intermodal, particularly in the face of hours-of-service, the driver shortage, and other capacity constraints faced by the over-the-road truckers.

Bentz: Tony and Bill are both right on. I think growth in intermodal is theoretically sustainable. The constraints on expansion will largely be self-imposed, either by not being able to build capacity quickly enough to keep

Carriers continue to invest billions in infrastructure and new locomotives to add capacity and reduce bottlenecks, so I would add that continued long-term improvements should be expected.

—Bill Rennicke,
partner at Oliver Wyman

pace, or by mini-melt-downs whenever there is a surge in volume, whatever the reason.

LM: *In recent years, intermodal has seen its primary growth on the container side, with trailers largely on the decline. Is this permanent as opposed to a long-term trend?*

Rennicke: It's unlikely that trailers will increase in the share of intermodal. Domestic containers continue to replace trailers at a great pace.

Hatch: Trailers are the "gateway drug" of intermodalism. Try them and then you want the good stuff—the economics of double stacking. I see this trend continuing.

Bentz: I would actually say it's both: a permanent and a long-term trend. Stack train economics are so compelling that the trailer is doomed to be a second-tier player. Hauling "wheels-on-wheels" does not make sense from

the standpoint of economics, physics, and environmental impact.

LM: *As we mentioned earlier, railroad service has been a topic of interest lately, especially in Q1, which saw service declines for a number of reasons, including the difficult winter weather. What is the current state of railroad service in your opinion?*

Bentz: Yes, the problems stemmed from bad winter weather for an extended period, coupled with surges in energy and energy-related traffic. Service will likely rebound as the weather improves, but that also brings the warm-weather construction season, which is sorely needed to plow money into capacity expansion.

Rennicke: Those are good points, and I would add that service is in a recovery mode. Even when the weather-induced bottlenecks are totally freed up it will take some weeks for the national system to get cycle times back to levels from Q3 2013.

Hatch: I have to say that the amount of capital expenditures (capex) put into play to solve the services issues is impressive. I'm just back from a rail research trip to North Dakota, and you can see the work that's being done in terms of things like sidings and double tracking.

LM: *What can shippers expect in terms of service over the next year?*

Bentz: I think it's going to be a bumpy ride for a while yet, until some of these issues mentioned above sort themselves out. I don't think there's a silver bullet lying around, just waiting for someone to pick it up and fire it. Railroads will need a combination of lever-pulling in order to get service back to where shippers expect it.

Hatch: My projection is that service will be close to "normal" by the





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end of this quarter, and should go back to a level of continuous improvement based on the management focus, the dollars spent—some 19 percent of revenues, more in some cases—and the IT involved as well.

Rennicke: Carriers continue to invest billions in infrastructure and new locomotives to add capacity and reduce bottlenecks, so I would add that continued long-term improvements should be expected.

LM: *In what ways are market conditions affecting capacity and rates for rail and intermodal?*

Rennicke: Railroads continue to require increased rates to fuel the billions of dollars of capacity investments that are required. I would expect rate increases where market conditions permit.

Hatch: Slot capacity has been affected by the combination of cyclical (carload), episodic (grain), new (CBR), and secular (intermodal, particularly domestic intermodal) growth all at the same time. This, too, shall pass.

Bentz: Keep in mind that trucking is going through an interesting period, with volumes backed up due to capacity constraints, rising prices, driver shortages, and the same bad weather that affected the railroads. This has helped shove more volume to intermodal, which is going to be a continuing trend as energy costs remain high and likely go higher.

The really interesting dynamic will be how well the railroads can penetrate the shorter-haul markets. They do very well in the long-haul lanes, but the vast bulk of U.S. freight moves on much shorter lanes, under 750 miles. Some rail carriers are making an effort to go

after this, and their ability to succeed in this space will be instructive.

LM: *Is pricing where it needs to be, given that rails are on the hook for the lion's share of their capex, which continues to hit record levels?*

Hatch: Pricing needs to continue to be unregulated and go up on a consistent basis to continue to grow ROI, which leads to capex—which leads to capacity and service.

Rennicke: There is a high correlation between operating income and capex. Operating income is significantly fueled by increased rates. Railroads should continue to increase rates to support the private sector funding of the national network.

Bentz: I think the railroads have a manifestly greater understanding currently of their operating costs, margin requirements, capital needs and—probably most importantly—what the competition, meaning trucking, is doing. So, they are now much better at fine-tuning their pricing to remain competitive.

As mentioned earlier, the biggest challenge will be in creatively pricing in the short-haul markets where rail's traditional inherent advantages are at their weakest. So, yes, on balance I think pricing is largely about where it needs to be, for now.

LM: *How will the rail and intermodal markets look five years from now?*

Bentz: I can answer two ways, by expressing what I think and what I hope. I think we will continue seeing very large commitments of capital for capacity expansion. It won't be enough to ward off congestion, because volume will continue to

grow apace.

I think the railroads will continue trying to improve operationally to cope with additional volumes and continue growing. I also think that their financial results will bear this out. The net result will be both robust carload and intermodal business on just about every network, even in the face of potential issues implementing PTC (positive train control).

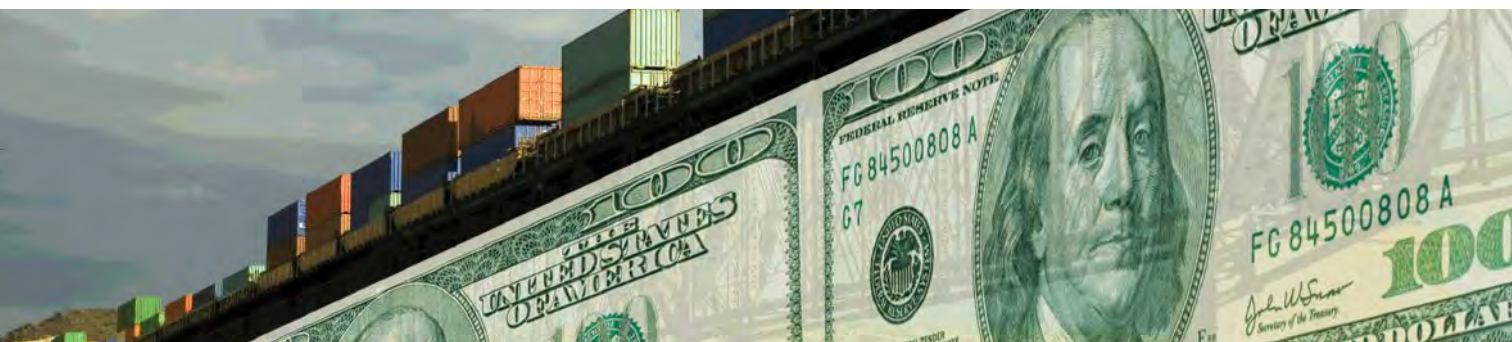
On top of all that, I hope the railroads amend their strategic vision to place a heavier influence on the use of technology-enabled solutions for core functions, such as rolling and linear assets and end-to-end transportation management to facilitate providing complete supply chain visibility and event management to their beneficial cargo owners.

Rennicke: The state of the industry and the ultimate structure will largely depend on what happens with regulation and legislation. We are nearing a fork in the road. We can embrace a private sector rail industry that fully supports capex from its earning, or we can pursue a path of increasing regulation and price controls that lead to an industry that will not be able to support itself from earnings.

The latter path may be fraught with all of the public underfunding issues that face our highways, airports, and waterways. The latter path could also lead to the railroad looking more like a regulated utility.

Hatch: The markets will be bigger and more important, have better service metrics, and still be tight in terms of demand/supply.

—Jeff Berman is Group News Editor





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The rise of e-commerce, more frequent promotions, and competitive service-level agreements are creating more peak periods than ever in the DC. Here's a look at five strategies companies are using to handle peak demand.



5 ways to PEAK DEMAND

BY BOB TREBILCOCK, EDITOR AT LARGE

handle

Peak demand isn't what it used to be. At least that's what some retailers and distributors are saying. Take United Stationers, for example, a wholesale distributor and e-fulfillment provider of business products and industrial supplies that operates more than 60 warehouses.

"In the past, we had seasonal peaks, like back to school or the start of the year when businesses have new budgets," says Bill Stark, vice president of engineering. "You'd see a 25 percent bump for a few days or weeks, and then it would taper down to average."

Those seasonal peaks were predictable thanks to historical data from previous seasons. The same held true for how orders rolled through the facility during a typical day.

"It used to be that orders flowed in during the first shift, we picked them on the second shift, and we shipped them on the third shift for next-day delivery," Stark says. But, little is predictable about business today. "People go on the Internet when they get home from work," says Stark. "In the morning, we have a slew of orders that came in overnight. Meanwhile, I'm likely to get a bunch of orders between 3 p.m. and 6 p.m. that have to get picked to meet the UPS cut-off time."

Because United Stationers promises same-day and next-day delivery, Stark is often managing the flow of orders by half-hour windows to hit the all important cut-off times set by the carriers. "They're going to pull the truck out at 7 p.m. whether something is on it or not," he says.

United Stationers' experience is far from unique. Retailers, e-tailers, and distributors alike are struggling with peaks in their operations. Like with United Stationers, some are challenged by same-day shipping and next-day delivery. Some are dealing

with the slew of promotions common to e-commerce marketing strategies. Still other retailers are now dealing with non-traditional holiday peaks. "We have customers who deal with peaks at Halloween and Cinco de Mayo," says Mike Khodl, vice president of solution development for Dematic. A retailer selling camping and hiking gear may get hit around Memorial Day, the start of the camping season. "I just ordered three kayaks online," Khodl says. "Once, I would have picked those up in the store. Now, they have to be packed in a warehouse for home delivery."

Fanatics, the distributor of licensed sports apparel and accessories is an example of an e-tailer with unconventional peaks around important sporting events like the Final Four and the start of NASCAR. At those times, average to peak demand can increase by a factor of 10—from 50,000 to more than 500,000 orders per day.

While automation may be part of the solution, managing peak is more often a combination of clever staffing and flexible processes enabled by technology. These solutions allow a user to flex up or down very quickly. Fanatics, for instance, forgoes reserve storage: Instead, all incoming inventory is placed into totes and stored at a pick face. Meanwhile, United Stationers



Retailers and distributors are often turning to simple and easily scalable solutions, like voice- or light-enabled picking, to manage their peak demand.

relies on voice-enabled picking and a conveyor system. “The voice system monitors the performance of our associates, which allows us to easily move multiple people into a zone as needed, while the conveyor routes an order to all the zones required,” explains Stark. “I have to have that flexibility.”

Here’s a look at some of the different ways peak presents itself in facilities today and five strategies to cope with the peak challenge.

1. Think about your picking strategies

Different peak cycles create different demands on the distribution center, according to Luther Webb, director of operations and solutions consulting for Intelligrated. Seasonal demand, like back to school, drives an increase in multi-line orders—a parent may order notebooks, paper, pencils, and erasers for their child. Promotion-driven spikes, on the other hand, are likely to drive an increase in single-line orders for the product being promoted.

In the multi-channel facilities being designed today, the system has to be flexible enough to manage both situations. To handle promotional peaks, Webb urges clients to position the promotional inventory near the pack station. That way it’s efficient and fast to pick and pack the jump in single-line orders. To accommodate multi-line orders, including a multi-line order that may include a promotional item and another product, the DC can determine whether it’s more cost-effective to consolidate both items into one package or to simply ship two separate packages.

“Facilities have a cost model that calculates how much it costs to ship, and everyone knows their average cost per piece,” Webb says. “Or, it could just be that you absorb the cost, because you don’t have the time or capacity to do a consolidation and still meet the service-level promise.”

2. Design below peak

When you design a new church, the saying goes, you build the sanctuary for Easter Sunday, even if many pews are empty the rest of the year. That’s designing for peak. In a distribution center, it’s more common to design

6 ideas to shorten peak response time

One experienced operator says it’s time for some out of the box thinking inside the DC.

Partnering with your neighbor to share labor may seem unorthodox, but it’s just one of several ideas The Progress Group’s Jim Kitts suggests retailers consider to handle peak demand. “The challenge for those of us in the DC is to get product out the door,” says Kitts. “These are out of the box ideas, but it may be time to get HR and corporate training to understand that handling peak demand is a challenge for the distribution center and we may need to change the rules.”

Here are six ideas Kitts believes that when implemented can shorten peak response times.

1. Partner with a local business or businesses and share labor when possible. This will help keep the attrition lower at both facilities if the organizational values match and the processes are similar.

2. Cross-train your team across all departments. Sometimes the receiving and put-away departments can be pulled into an outbound operations department.

3. Know your bottleneck and never starve it. When you have a lot of orders to process, the last thing you want is equipment or product constraints, not to mention a deficiency in

trained personnel to perform that work.

4. Train more people to troubleshoot and solve problems. Typically when the volume increases, the processing quality decreases—mostly due to inexperience associates working in the operation.

5. Make your processes so simple that training is uncomplicated. Experienced associates will tend to spend time with inexperienced associates, helping them understand the processes. Now you have a new associate working with an experienced associates and neither one of them are processing even half of the expected units. As an example, for RF picking, have RF unit screens set up so they can direct a picker through the process in an easy-to-understand format.

6. Use tasks such as cycle counting and reslotting as a method to balance labor. For example, an e-commerce fulfillment center that operates five days a week can expect Mondays to be by far the busiest day of the week. The cycle counting and reslotting programs can be designed for Tuesday through Friday but skip Mondays. The same logic can be used for distribution centers that have a spike in activity the last week of the month: do ongoing cycle counting and reslotting the first three weeks of the month and plan to skip the last week when the focus of the facility will be getting peak level orders out the door.

below peak, says Andy Williams, senior business development manager for Vanderlande Industries.

That’s an approach Urban Outfitters, one of Vanderlande’s customers, took when it developed a new multi-channel facility that manages full- and mixed-carton orders for wholesale customers, store replenishment, and direct-to-consumer e-commerce orders. Each of those channels has its own rhythm and peaks.

“The wholesale side of the business has an end of the month peak and is quiet for the other three weeks,” Williams says. “Retail has multiple peaks, including seasonal and promotional peaks, while e-commerce can have peaks within a shift. The challenge

was to find the sweet spot across those three channels.”

In the new facility, the retailer maintains separate stock for the wholesale/retail channels and the direct-to-consumer channel. It also has subsystems optimized for the different channels. Each picks for e-commerce are sorted to packing stations by a unit sorter.

Full cartons may be sent to a put-wall system or they may bypass sortation all together and go straight to a pallet-build area to create orders for stores. Mixed carton orders for wholesale customers and stores are filled in a “rebin” area, where a put-to-light system directs the carton-building process. The retailer’s warehouse management system (WMS) has the ability



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to create waves within order waves to handle priority or rush orders during peak times.

“The most important thing is to understand how all of these different peaks may overlap within the system, and which subsystems, like packing, are shared by all three channels,” says Williams. “You have to have a lot of flexibility to push the flows through the different subsystems.”

3. Be flexible and scalable

Designing for peak is a combination of flexibility and scalability, says Dematic’s Khodl. “From a strategy standpoint, we have to build flexible designs that can meet today’s operational needs,” Khodl says. “They also have to be scalable to accommodate future growth.”

Khodl advocates a highly automated picking engine to handle everyday demand, such as a cross-belt sorter or goods-to-person picking solution, enhanced by a semi-automated or manual solution to handle peak

demand. Those may include a light-directed mobile putwall or voice-enabled picking. “We’re not bolting a lot of automation to the floor for peak,” Khodl says. “Instead, we’re relying on software to manage inventory, orders and enable picking.”

One solution is to use a conveyor to deliver totes to a fixed putwall for average demand. On a peak day, or during peak hours during a shift, a facility might roll two mobile putwalls onto the floor near the pack station. These are essentially carts on wheels. Totes can be delivered by conveyor or manually to the temporary workstations to fill orders. If business increases, the facility can scale up by simply adding more mobile putwalls.

Khodl adds that peak demand affects all of the functional areas of the warehouse, from receiving to shipping. “You may have to devise new strategies to receive during peak or deal with the out flow to meet order cutoff times for parcel carriers,” Khodl says. “You may

have to store more at the case level than the pallet level to react to the demand for piece picking. A conventional very narrow aisle (VNA) pallet pick system is just too slow for daily demand peak.”

For instance, Khodl says Dematic is developing a shuttle system to automatically replenish case flow storage systems in a conventional pick-and-pass zone picking module. “It’s more cost effective than using a mini-load for replenishment, and I can remove labor and increase accuracy in replenishment, which is an area where a number of errors are introduced,” Khodl says.

4. Use automation wisely

Many facilities add extra employees or extra shifts to handle peaks. That, however, isn’t always practical, says Kevin Conner, director of system sales for Chicago-based World Source. “We see companies automating those areas where it’s too crowded to add more bodies or that become bottlenecks,” says Kevin Conner,

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director of system sales. The addition of automatic taping lines in packing, for instance, limits the amount of labor required to get orders out the door and clears up a bottleneck in processing.

Conner looks for simple ways to process peak orders in an off-line manner. One example is to create a blitz line—a special area to process an Internet special or promotion. “That can be as simple as creating a special area with a temporary case flow line or even just full pallets on the ground of the fast-moving SKU,” says Conner. “You can pick the orders to a gravity conveyor and manually push them down to a packing station or load the orders on a pallet that is moved to packing.”

A second strategy is to create an active storage area in reserve storage for the fastest-moving items or items brought in for a seasonal promotion. Those items can be picked to a cart or an order picker and then inducted onto a conveyor or delivered directly to the packing area. “There are always

efficient ways to do manual processing,” Conner says.

5. Realize it's all about staffing

Today, Jim Kitts is a director with The Progress Group, a design and consulting firm. In a previous life, he experienced peak demand as an operator at two nationally known retailers. He viewed peak first and foremost as a staffing issue. He worked with HR to develop flexible work rules to address these peak periods with the workforce.

For example, in addition to full-time staff, he developed experienced part-time workers who worked a 9 a.m. to 3 p.m. shift or three 8-hour shifts a week. If a DC was unexpectedly hit with orders, he would start by asking his full-time employees to work a 10- or 12-hour shift. Next, he would ask those part-time workers to work a full 8 hours or to work a fourth day.

Another approach was to cross-train full-time associates across all

departments, especially those jobs that require training on equipment such as lift trucks and stock pickers. “Temps can muddle through picking and packing,” says Kitts. “But you can't put temps in receiving, stocking picking, and case replenishment because they won't be able to run the equipment.” Kitts adds that during peak season he over-staffed areas most likely to be a bottleneck just to make sure he was covered (see sidebar for more staffing ideas).

Finally, he looked for opportunities to simplify processes wherever possible. In the packing department, for instance, he created a picture board that illustrated how to pack specific products. Temporary pickers were given instruction cards for handling specific situations. “We had a card that explained what to do if a picking location was empty,” Kitts says. “You want the process so simple that anyone could accomplish it. That allows you to support people who are working today and may not be there tomorrow.” □



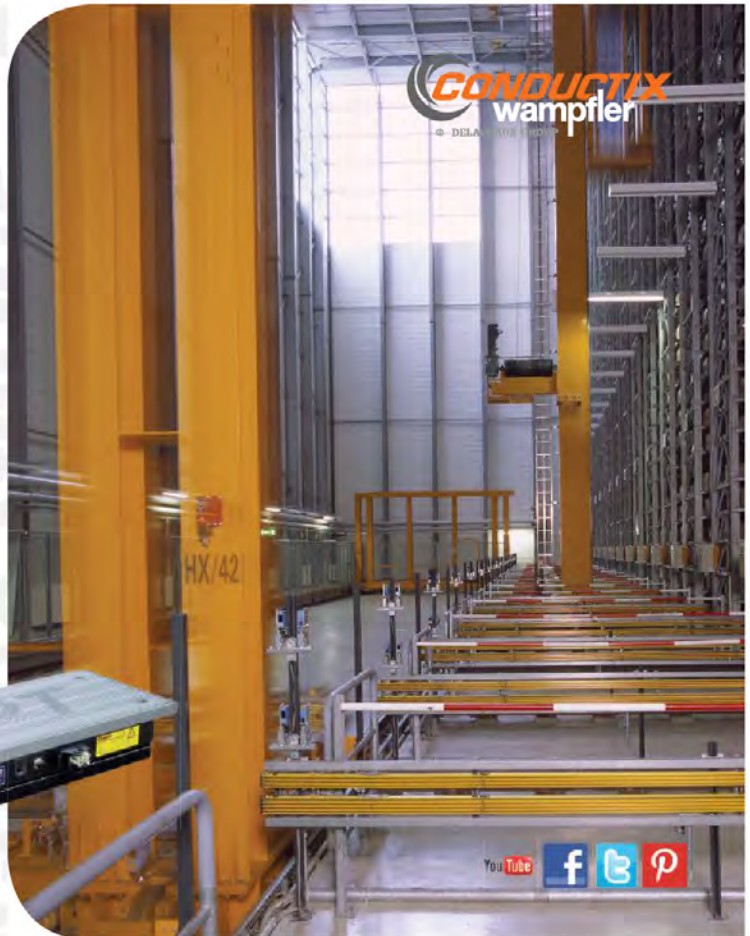
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11th Annual Software Users Survey

CAUTION lingers

Our new reader survey reveals a cautious approach to supply chain software investment and some lingering uncertainty over the place cloud computing will hold in the greater supply chain solution hierarchy.

BY BRIDGET McCREA, CONTRIBUTING EDITOR

According to the findings of *Logistics Management's 11th Annual Software User Survey*, more shippers are scrutinizing their investments, moving forward cautiously, and upgrading existing solutions versus acquiring new software packages.

Conducted annually by Peerless Research (PRG), the survey explores intentions of *Logistics Management* readers regarding supply chain software, the key solutions they're using and considering, and offers insight into how their habits and intentions have changed in the past two years.

Over the next few pages, we'll look at the results of this year's survey, identify how shippers are allocating their budgets in 2014, and talk to two analysts about their observations on the current adoption of supply chain software and where it's headed.

Wanted: More visibility, fewer disruptions

Shippers may say they're focused on improving supply chain visibility and avoiding potential disruptions in their end-to-end supply chains, but those efforts have yet to show up in their companies' software acquisition strategies.

More than 50 percent of survey respondents say that their use of supply chain software has stayed the same for the last two years, while 45 percent cite an increase. About 70 percent of firms have been using the same software

packages for the last two years, while 26 percent are now using more than they were in 2012.

Those companies that *have* added software to their arsenals over the last two years say that they've been able to win new business, improve inventory controls, and gain better transportation visibility as a result.

When asked *why* they aren't using more solutions, respondents largely blamed the presence of disparate systems and integration challenges for curtailing their software investments. "It's interesting to see a common theme around integration challenges," says Belinda Griffin, global supply chain executive program manager at Capgemini Consulting.

According to Griffin, the problem can become especially onerous for companies that take a piecemeal approach to software adoption. In such cases, she says that companies look at their existing technology footprints and decide to either replace one aspect of those footprints or add something new on top of them.

"The plus side is that this approach costs less than ripping everything out and doing a greenfield deployment," says Griffin. "The downside is that you're going to deal with integration challenges."

According to the survey, just 26 percent of shippers plan to buy supply chain software in the next 12 months, while 74 percent say their firms have no such intentions. Warehouse management systems (WMS/46 percent), transportation



management systems (TMS/39 percent), and inventory optimization applications (30 percent), rank as the top three solutions that the 26 percent are planning to purchase or upgrade.

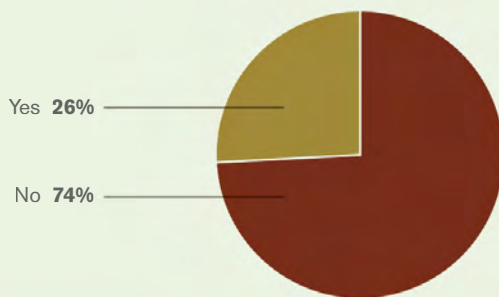
Of those firms currently using or planning to upgrade enterprise resource planning (ERP) software, 78 percent say it will include WMS and 56 percent say it will include TMS.

Dwight Klappich, Gartner's research vice president, says he's also seeing this "good enough" attitude among shippers that don't necessarily need all of the full features and functions associated with best-of-breed WMS and TMS. "We're seeing a growing trend towards shippers using ERPs from Oracle, SAP, or Infor, for certain logistics components," says Klappich. "They're basically saying 'good enough is good enough' when investing in ERP systems that come with their own versions of TMS and WMS."

From their WMS, the survey found that most shippers want real-time control (65 percent), inventory deployment (50 percent), and labor management (46 percent). When purchasing TMS, companies are looking for routing and scheduling (73 percent), routing and rating (68 percent), carrier selection and load tendering (55 percent), and ship-ment consolidation capabilities (55 percent).

In terms of supply chain planning (SCP) as a whole, shippers invest in software in order to gain better inventory

Is your company planning to buy supply chain software for your operation in the next 12 months?



Source: Peerless Research Group (PRG)

visibility (56 percent), order management (56 percent), and demand planning (56 percent).

Cloudy skies

For the survey, *Logistics Management* also asked respondents about their use of cloud computing options in the supply chain software space.

Twenty-seven percent of shippers say they're currently evaluating cloud options or that they plan to do so within the next 24 months; 26 percent say they're not sure if their companies are interested in cloud computing; and 24 percent

have already adopted such solutions.

Another 17 percent checked the “it’s not an option for us” choice when asked about their cloud computing intentions. Security concerns, privacy issues, system reliability, and data integrity topped shippers’ lists of cloud-related concerns.

In reviewing the results of the past year’s results, Griffin says that there’s been very little change year-over-year in the number of shippers that are considering or using cloud supply chain solutions.

So, while the cloud has clearly changed the way individual users acquire and integrate software and data storage in the mainstream, the supply chain sector has largely remained a traditional purchase-and-install environment. A combination of security concerns and heightened sensitivity around privacy in the wake of several highly publicized data breaches, have made shippers wary of “putting it all out there” in the cloud.

“We’re of course seeing this more in the financial systems arena, but there’s probably also a spillover effect that’s pushed companies to consider the vulnerabilities of cloud computing,” says Griffin-Cryan, who has tracked a 6 percent positive shift among firms that are planning to purchase a cloud solution and those that have actually adopted it.

Shippers may say they’re focused on improving supply chain visibility and avoiding potential disruptions in their end-to-end supply chains, but those efforts have yet to show up in their companies’ software acquisition strategies.

“At this point you can basically divide the universe into two halves: those that are dead set against cloud and those that are open to it,” says Griffin. “Of those that are open to it, we’re seeing a higher percentage move off the fence and actually put in cloud-based solutions.”

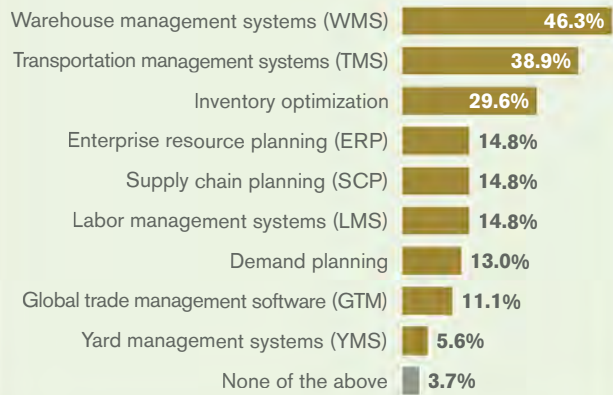
Show me the money

In assessing their software budgets for the next 12 months, 52 percent of survey respondents plan to spend less than \$99,999 on supply chain software (including license, integration, and training), while another 23 percent say they’ll shell out between \$100,000 and \$499,999. Nine percent of companies will spend \$1 million to \$1.9 million, and another 8 percent have budgets of \$500,000 to \$999,999 for software investment.

When gauging expected return on investment (ROI) from their supply chain software, 67 percent of shippers say that they perform analyses to determine that ROI, while 33 percent say that they don’t. The largest portion of shippers expect ROI in 12 months to 18 months (39 percent), while 29 percent say 6 months to 12 months, and 23 percent cite more than 18 months as their expected payback timeframe.

The majority of companies (55 percent) are handling

Which of the following types of software does your company plan to purchase or upgrade in the next 12 months?



Source: Peerless Research Group (PRG)

integrations in-house, while 19 percent are turning to their software suppliers, and 14 percent are using systems integrators.



According to this year’s results, most shippers (84 percent) are using buying teams to make supply chain software purchase decisions, with another 16 percent saying that they rely on one individual to handle the task. In most cases, individuals from corporate management (69 percent), warehousing, distribution, and logistics (62 percent), and purchasing (56 percent), fill out those buying teams and

make the decisions.

When acquiring software, logistics professionals say that compatibility with existing systems, configurability, service and support, right features for the operations, the supplier’s financial stability, and ease of installation are all “very important” factors.

Room for improvement

The national economy may be closely creeping back up to affable levels, but that doesn’t mean companies’ technology purse strings are loosening yet.

In fact, Klappich says a common theme across this year’s users study is “replacing or upgrading what’s already there, versus focusing on new and more innovative investments.” This frugal mindset may give way to different approaches as the economy continues to improve, but for now it’s the name of the game.

“We’re definitely seeing more companies double down on the supply chain software they’ve already invested in,” says Klappich.

Shippers are also looking for more value-added

opportunities—or, ways to enhance their existing systems without having to invest in new solutions or infrastructure. Expect this interest in software optimization to continue, says Klappich, particularly in areas like WMS and TMS, where many shippers are only using the systems' basic functions.

In reviewing respondents' individual survey comments, Klappich zeroed in on the fact that many shippers are concerned about a lack of IT talent and support. "This is the first time I've seen anyone call out the fact that IT talent is a challenge," says Klappich, "and it's likely because that type of talent is in demand right now across the board. Shippers are feeling the impact of that dearth."

Finally, Klappich says that the survey revealed distrust,

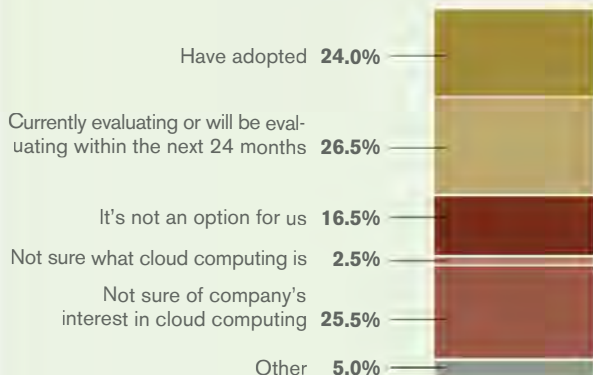
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dishonesty, and a lack of communication between users and software vendors. He says the fact that supply chain software vendors have in some cases moved away from offering flexible applications could be driving some of that disenchantment with their offerings and service levels.

"At this point, it looks like some customers just don't feel like they always have open and honest lines of communication with their vendors when conveying information around schedule delays, for example," says Klappich. "We're hearing the same thing from the companies that we work with, and it's an area that could use some improvement."

Bridget McCrea is a Contributing Editor to Logistics Management

Which best describes your company's status regarding the adoption of cloud computing?



What do you see as the main concerns or fears surrounding the use of a cloud computing strategy?



Source: Peerless Research Group (PRG)



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2014 Cross-Border Roundtable:

Building the future of hemispheric trade

Trade volumes between the U.S., Canada, and Mexico are massive and growing due in no small part to the fact that manufacturers now treat the continent as one seamless market for production and distribution. Our panelists offer insight into the bright outlook for hemispheric trade.

BY **PATRICK BURNSON**, EXECUTIVE EDITOR

While the U.S. has finally recognized its need to invest in more transportation infrastructure, our cross-border trading partners may be a step ahead of us.

This is a good thing, say trade analysts, who note that hemispheric commerce will only become stronger in the coming years. At the same time, shippers will be tracking the progress being made with other trade agreements, especially the Trans-Pacific Partnership (TPP), and keeping an eye on the pending Panama Canal expansion.

Joining us in our annual update of the state of cross-border trade and the continued effectiveness of the North American Free Trade Agreement (NAFTA) are William Nelson, holder of the J. Fred Holly Chair of Excellence and professor of economics at the University of Tennessee's College of Business Administration; Daniel Griswold, president of the National Association of Foreign-Trade Zones (NAFTZ); and Bryan Riley, a senior international trade policy analyst for the Heritage Foundation.

Logistics Management (LM):

If the Trans-Pacific Partnership (TPP) agreement fails to gain approval this year, will U.S. shippers concentrate more of their efforts on near-shoring?

Daniel Griswold: TPP is unlikely to pass in 2014 given the sticky issues still outstanding. Whether it ultimately passes or not, North America will continue to be the center of gravity for U.S. trade. Our trade, energy, and investment ties to Canada and Mexico will remain strong due to proximity and the 20-year success NAFTA has had in integrating our supply chains and product markets.

Bryan Riley: TPP countries will continue to be important trading partners regardless of what happens with negotiations in the near term. In 2013, TPP countries accounted for 43 percent of U.S. goods exports and 38 percent of U.S. imports. Since the turn of the century, trade in goods between people in the U.S. and in our TPP trading partners increased by over 50 percent, and that trend is likely to continue. Even if the TPP agreement fails to gain approval this year, there is a good chance that a mutually beneficial agreement will eventually be reached.

William Nelson: It's important to keep in mind that the key features of the proposed TPP are the lowering of traditional trade barriers and the standardizing of regulations across participating countries. At its most basic level, it will change the relative prices of goods and services across countries, reducing the relative prices of goods produced all or in part in member countries, and increasing the relative prices of goods produced elsewhere.

The partnership excludes China, and even though much of the attention is devoted to increased access to markets in Japan, another large impact of the partnership comes from raising relative prices of goods whose value chains run through China. For this reason, failure to approve the TPP this year is more likely to have an impact on shipping to and from China than on near-shoring.

LM: *What changes in NAFTA pose the greatest opportunities for U.S. shippers?*

Riley: One of the greatest opportunities for U.S. shippers is an improvement in rules of origin that allows companies to make better use of global



supply chains. New trade agreements may also be open in nature, allowing other countries to join in and thereby greatly expanding shipping opportunities.

Griswold: I'll add that major changes in NAFTA are unlikely given the success of the agreement in promoting a more robust North American market. The most recent change is that, after 20 years, the U.S. is finally fulfilling its obligations to allow cross-border trucking, which will make North American supply chains more efficient by eliminating unnecessary delays at the Mexican border.

LM: *Should logistics managers be concerned about any major regulatory or compliance changes coming from Customs?*

Griswold: I see more opportunity

on the upside here as well. Canada and Mexico have both been moving toward lower tariffs on manufacturing inputs, which will make operations in those countries more competitive. In the U.S., new regulations have made the Foreign-Trade Zones program more useful than ever. At the urging of my association, NAFTAZ, and others, U.S. Customs is closing in on completing the Automated Commercial Environment, which should eliminate paper transactions across the border in a couple of years. The WTO agreement last year on trade facilitation promises to streamline trade regulation around the world, especially in developing countries.

LM: *Do U.S. manufacturers have an easier time of monitoring human rights and environmental abuses in NAFTA*

nations as compared to factories elsewhere in the world?

Nelson: Citizens of richer countries tend to demand more human rights protection and environmental protection than citizens of poorer countries. Because production tends to occur in the lower-wage country and consumption in the higher-wage one, consuming countries are more sensitive to issues of human rights and the environment than producing countries.

To protect both brand name and market share, importers must monitor and protect human rights and the environment all along the value chain. NAFTA has increased the value of monitoring more than it has lowered the cost, and this leads to more monitoring of human rights and the environment throughout the trade region.

TTI releases NAFTA 20 Years After

When the Texas A&M Transportation Institute (TTI) released a meta-analysis of research on the North American Free Trade Agreement (NAFTA) last month, it confirmed that the long-term outlook for North American competitiveness is “promising.” But that doesn’t mean trade policy can’t be improved.

“Findings from the meta-analysis show that all three North American economies have benefited enormously from NAFTA over the past 20 years,” says Juan Carlos Villa, trade expert and Latin America Regional Manager at TTI. “Efficient border-crossing processes, improved cross-border trucking, updated infrastructure with increased use of technology, and information exchange are some of the key elements that require continued work.”

The TTI research team reviewed numerous research reports published over the past 10 years to identify points of consensus

among researchers on the outcomes of NAFTA implementation and on recommendations for improvement.

Chief among the successes are harmonization of climate change policies and efficient tri-lateral energy production supply chains. These developments have contributed to U.S.-Canada surface trade doubling and U.S.-Mexico trade quadrupling in the 20 years since the implementation of NAFTA. The study also provides an overview of broadly agreed upon barriers holding back further economic success.

“NAFTA 20 Years After identifies expert agreement on unresolved issues stalling the advancement of economic integration that would make the entire North American trade bloc more competitive,” says Dr. Stephen Blank, co-chair of the North American Transportation Competitiveness Research Council. “Policy and process modernization is lagging behind the pace of growth.”

Riley: I agree with Bill. In general, expanding international commerce improves both human rights and environmental progress. Since NAFTA took effect, for example, real wages in Mexico have increased while poverty rates in Mexico have declined. According to Yale University’s Environmental Performance Index, which goes back to 2002, Mexico’s air and water quality have improved along with the country’s overall environmental performance.

Griswold: That’s correct gentlemen. One of the many benefits of NAFTA has been an upgrading of labor and environmental standards among the three partner nations, especially Mexico. As many of us who supported NAFTA predicted, the agreement has institutionalized reform in Mexico. Its economic policy is more stable, transparent, and business friendly, resulting in a more attractive environment for U.S. manufacturing investment. Since NAFTA was enacted, Mexico has achieved a stable macro-economy and a competitive, multi-party democracy.

LM: *How does the transportation infrastructure in Canada and Mexico measure up to that of the U.S.? What aspects are better or more likely to improve?*

Riley: In the original U.S.-Canada FTA and NAFTA negotiations, the U.S. refused to consider changes to the Jones Act, which restricts the use of foreign-built and foreign-owned vessels. Opening U.S. domestic maritime transportation to international

competition would improve transportation options. The growth of U.S. domestic energy production may put new pressure on Congress to revisit Jones Act restrictions on maritime commerce.

Nelson: That’s a good point, Bryan. Meanwhile, Canada and Mexico are both making strategic investments in transportation infrastructure that will lead to improvements. Canada’s efforts are driven by two factors: a desire to increase access to energy and mineral resources, and a reliance on private/public partnerships to fund improvements. The latter tends to channel funds toward the highest-value use, increasing the impact beyond what normal political considerations would dictate.

Mexico has been building infrastructure to increase connectedness, both from ports to the interior and from the south to the north. These improvements have led to dramatic drops in transportation times and delays, making Mexican ports more competitive than they used to be. The U.S., in contrast, is struggling because of deficit issues coupled with a history of federal funding for transportation infrastructure.

LM: *With the Panama Canal expansion moving ahead on schedule, will new trade patterns emerge to threaten NAFTA?*

Nelson: Probably not. The Panama Canal expansion will clearly add value to the supply chain, but it has not yet been settled who will capture that

added value. If the canal captures it through higher fees, no change in trade patterns will emerge. If they don’t raise fees enough to capture all of the added value, then others have opportunities to adjust their charges to capture this value. The players include shippers, ports, inland transporters, and so on. After all price adjustments are made, little room will be left for new trading patterns.

Griswold: I agree with Bill, and I don’t see any threat to NAFTA or the NAFTA countries from completion of the Panama Canal. In fact, the canal project has spurred investment in port infrastructure in North America, especially along the East and Gulf coasts. More traffic may be routed to the deepwater ports ready for the post-Panamax ships, but I don’t see any fundamental change in the competitiveness of North American producers.

Riley: Certainly expansion of the Panama Canal will create new trade opportunities, but these opportunities are more likely to complement NAFTA than to threaten it. Canada, Mexico, and the U.S. will all benefit as trade barriers are reduced, whether they are physical trade barriers like canals and ports that are currently too small, or government trade barriers like tariffs and quotas. Other technological changes including the expansion of internet-based commerce will create additional opportunities for global trade.

Patrick Burnson is Executive Editor of Logistics Management

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RFID and the Supply Chain:

The RFID market is showing signs of steady growth as companies work to achieve a meaningful return on investment in specific areas of given processes.



BY JOSH BOND,
EDITOR AT LARGE

It could be argued that the industry got a little ahead of itself in the early 2000s when radio frequency identification (RFID) was expected to transform supply chains overnight.

The concept of the “Internet of Things” was still years away, but the appeal of digitizing physical assets and achieving absolute visibility led to some grand theories. However, although much of the early hype has faded, RFID continues on a trajectory toward widespread adoption and impact.

“People had unfair expectations that it could change the world in a couple of years,” says Michael Fein, senior product manager for RFID at Zebra Technologies. “But if you look at the technology adoption curve, RFID is not at all behind. I’d say the technology is doing fantastically well.”

Other RFID system suppliers characterize the market as “going gangbusters,” “on a very healthy evolu-

tionary track,” and “growing at a rate significantly higher than traditional bar code growth rates.” These sentiments are backed up by RFID market research from IDTechEx, which expects the market to grow from \$7.88 billion in 2013 to \$9.2 billion in 2014—before more than tripling in the next decade.

The secret to this growth is not the wholesale replacement of bar codes with RFID tags, nor is it the deep pockets of sophisticated retail, healthcare, or governmental entities. It’s the mindset that a mere handful of tags and a single reader can provide a meaningful return on investment (ROI) for a very small slice of a given process.

“My advice is to be very focused,” says Alan Melling, senior director of strategy and software at Motorola Solutions. “If you try to solve every problem in the world with RFID, your project will fail. But if you want to know about

Measured progress

stock-outs in the underwear department, RFID could be a great solution.”

Many warehouses and DCs are already handling RFID-tagged items, but don't know or care. That's because many manufacturers are tagging their products at the end of the manufacturing line before packing them for shipment to the retail store.

There, RFID is used to manage inventory levels in the store. Yet as one brand of underwear, one hand truck fleet, and one receiving door after another become RFID-enabled, Melling says, the gaps in visibility and value will slowly begin to close.

“What will drive adoption in the long run is the Trojan horse idea,” Melling says. “When tags are in place because one part of the supply chain sees the value, the technology becomes more appealing for others to collect data because the required investment is much less. There's an opportunity to leverage an investment that someone else has already paid for.”

RFID readers are also writers, both detecting and updating the data stored on passing tags.



Remember: It took more than 20 years for bar codes to reach ubiquity.

Starting small

In all likelihood, bar codes will remain the standard for capturing data at specific points in a process for years to come. It's the places between those points where RFID might prove valuable.

Unlike a bar code, an RFID tag constitutes a unique identifier for the tagged item—it's not a pair of pants, it's this pair of pants. Uniqueness is often important in e-commerce applications where value-added steps result in a change to a product, which is another piece of information RFID is uniquely able to capture.

"Any system will tell you something moved from Point A to Point B, but RFID will tell you what happened in between by recording steps in a process as well as any state change," says Su Doyle, head of industry programs for OATSystems, a division of Checkpoint. "Now you know both where an item is and what it's doing. From there, you can start to think about what it could be doing."

For this data to be useful, it must feed a warehouse management system (WMS), an enterprise resource planning system (ERP), or some other system of record capable of identifying unique items. "Many WMS systems do not operate at an item level," says Fein.



Handheld RFID readers can scan large quantities of items simultaneously in a wide or narrow target field.

"This can create complications with many legacy systems." Then again, it might not be important to know that a certain pair of jeans was manufactured on a specific date.

Another benefit of RFID is the simplicity to count things rapidly and accurately—especially without line-of-sight or easy access. This can be an advantage in cycle counting in the warehouse or taking inventory at the shelf level in the store. Melling reiterates that the applications that succeed are very mundane.

"Everyone has systems to track

things, but they often don't work the way they might like," Melling says. "The system says I have five shirts in a location, but the picker sees three. There's a gap between reality and the system. RFID can tell you what the world really is, regardless of what the inventory system says."

Other adopters are using RFID to track dwell time or to ensure that product is moving from one process or step to the next. One project monitored the use of specialized lift trucks used to putaway bulk items in a warehouse. The first discovery was that the lift trucks tended to sit idle about 50 percent of the time. Another company used RFID for shipment validation of high-value product headed to high-value customers.

"In some circumstances, items got to the shipping dock and sat there for days," Melling says. "There's no way that's supposed to happen in the ideal process you've designed."

Still other manufacturers are using RFID to manage exception handling processes by identifying shipments that were set aside because they have a problem that needs to be addressed later. RFID allows them to quickly sort through the shipments to identify the

RFID printer/encoders replace standard label printers

Agron is an official licensee for Adidas, manufacturing accessories for the sports brand. When one of Agron's major customers adopted a new RFID approach, the manufacturing company had to begin adding RFID tags to all items for that customer, amounting to about 30,000 units every week.

After quickly replacing standard label printers with RFID-enabled label printers the company was able to boost inventory accuracy and reduce out-of-stock items without changing its processes.

"We process thousands of cartons a day and needed something that could keep up and encode tags reliably," says Marc Hernandez, director of service and distribution for Agron.

Working with an integrator, the company deployed the infrastructure for item-level tagging and other warehouse automation. Inventory software now controls and manages the serial numbers associated with each RFID-tagged item.

A new RFID printer/encoder provides a lower cost per label, fewer media-roll changes and fast throughput. As the printer prints the human-readable text and bar code on the face of the label, it also encodes the RFID inlay embedded in the label, providing an integrated solution with built-in error handling.

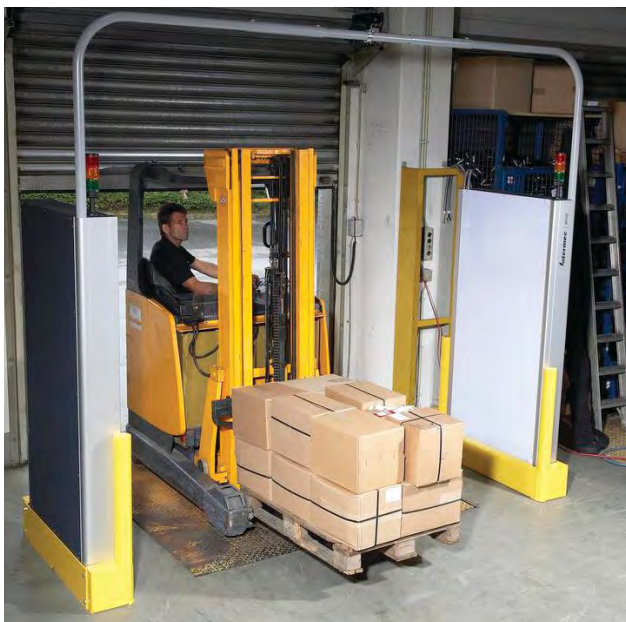
Each week, the company receives orders from the customer, typically for more than 1,000 store locations. Pickers gather products and move them to

printing/encoding stations for RFID tagging, where the new equipment prints all 30,000 tags in five to six hours.

With the new printer/encoder, Agron meets its customer's RFID directive without having to change its supply chain process or incur maintenance requirements. The new printer/encoders simply take the place of previous tag printers, which added zero time to the tagging workflow.

"From the point of view of our users, it was very smooth adding leading-edge technology to our existing process," Hernandez says. "Additionally, the printer/encoders run without the regular outages and maintenance we had experienced with previous printers."

—Josh Bond, Editor at Large



Data systems know when an item has left one process or entered another, but RFID can capture what happened in between.

next one to be worked on.

"I have seen capital goods manufacturers set shipments aside because they know there's a problem, and they need to sort through it, but later never comes," Doyle says. "Some manufacturers have boxes of incorrect shipments stacked to the ceiling, waiting to be addressed. Everyone has exception handling processes, but when everything is an exception, that's a problem."

Within a pallet of mixed goods, for instance, RFID can quickly locate the mis-pick or stock-out. Tom O'Boyle, director of RFID for Barcoding, offers the example of one customer whose receiving process was significantly improved by RFID.

"Now they scan for the three things that aren't here as opposed to counting everything that is here," O'Boyle says. "They now have more accurate data in a fraction of the time." For added convenience, a sort of 'Geiger counter' function can even point a worker to, say, the top left area of a container for the target item.

The last few inches

Whether between two points in a facility or between Shanghai and Los Angeles, RFID can prevent products and assets from getting lost along the way.

In the process, it can create visibility from dock door to doorstep, according to Kurt Mensch, RFID principal product manager for Intermecc by Honeywell. "Many are familiar with the concept of the last mile and how best to deliver products and collect data along that mile," says Mensch. "RFID can serve as a 'last few inches' technology."

Using RFID to ensure that the shelves inside a retail store always have all possible sizes can create a significant impact

in warehouse and DC operations, adds Zerbra's Fein, even if RFID is not used in the facility. Lots of execution functions react to that store-level RFID data, including seasonal preparedness, reverse logistics, merchandising or the establishment of regionalized inventory.

"If retailers are changing order patterns with RFID, which they should if they're using it properly, it affects manufacturing cycles and how warehouses are organized," Melling adds. "It informs what everyone wants and benefits everyone indirectly, although in the future it will start to benefit them more directly."

What all of these examples illustrate is that while the Internet of Things may not be as much a part of the discussion today as it was in the past, RFID is gaining traction in the supply chain. It's just not being used to track pallets and cartons as initially envisioned. The biggest challenge to the adoption of RFID moving forward could be the reluctance of many users to talk about the value they are realizing from the technology.

"In the past four years, RFID use cases have centered on customer-facing processes in both retail and industrial markets," says OATSystems's Doyle. "But I think it's interesting that aerospace and defense firms are talking about their successes with RFID while many retailers are much more secretive about the competitive advantages they have gained."

Josh Bond is Editor at Large for Logistics Management

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Finding a healthy balance

Finding the right third-party logistics provider (3PL) always involves considerable due diligence, contend industry experts. But it may also mean leaving an existing partner for a set of collaborators that can deliver on the promise of a seamless global network.

By Patrick Burnson, Executive Editor

2014 State of the 3PL Market Webcast

Thursday, July 10 at 2:00 p.m. ET
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Top 50 3PLs Special Report

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Leading industry analysts and consultants maintain that the landscape for global and domestic 3PLs may be shifting this year, but shippers can hedge their bets by vetting asset-based and non-asset players when planning future networks. A healthy service provider portfolio, say our analysts, includes a bit of both.

In fact, this year's list of Top 50 Global 3PLs, compiled by market consultancy Armstrong & Associates, validates the observation that shippers need a variety of options when it comes to moving freight this year.

"Shippers would prefer to work with a few providers, but the performance scale of operations often requires them to hire several 3PLs in order to optimize global procurement," says Evan Armstrong, the consultancy's president. "In the domestic arena, it's more centralized."

On the domestic front, both Coyote Logistics and XPO Logistics have broken the \$2 billion revenue barrier through acquisition, creating two "mega" freight brokers to rival 3PL domestic transportation management (DTM) market segment leader C.H. Robinson Worldwide. "With other major competitors such as Total Quality Logistics and Echo Global Logistics growing rapidly as well, this intense competition will continue to heat up," says Armstrong. "In the end, it will mean increased operational performance levels for shippers and further consolidation within the small freight broker ranks."

While the 3.5 percent year-over-year U.S. 3PL market growth in 2013 was sluggish, mirroring the overall economy, DTM led all 3PL market segments again in 2013, according to Armstrong's research. Gross revenues were up, as was the cost of purchasing transportation capacity. However, the ongoing driver shortage continues to pressure DTM gross margins and net revenue growth.

"International transportation management (ITM) saw another slow-growth year. Expeditors International, Kuehne + Nagel, and Panalpina all had year-over-year revenue gains of 2.9 percent or less," Armstrong observes. He also notes that more focus in Asia has been on building reliable regional value-added warehousing and distribution (VAWD) networks versus export activity.

"This has benefited Kerry Logistics and Toll Holdings who have significant operating networks in China and Southeast Asia," says Armstrong.

"As a sign of this shift, Kerry Logistics, the leading VAWD 3PL in Greater China, was spun off from its parent Kerry Properties Limited via an initial public offering in December 2013."

"Amazon effect"

Since 2011, Armstrong and his team have been monitoring the "Amazon effect" on the third-party logistics market as part of its strategy consulting work.

They're finding that it's becoming increasingly important for value-added warehousing and distribution-centric 3PLs with significant business in the retailing industry to anticipate continued growth by Amazon and position—or reposition—their companies within the market as more business shifts from brick-and-mortar stores to internet order fulfillment operations.

Armstrong says that while the internet services and retailing 3PL market sub-segment is only a small portion of the *Fortune 1000* domestic spend with 3PLs, it has grown 140 percent from 2007 to 2013.

"Amazon is the 800-pound gorilla in the e-retail market, and as it deploys its own local delivery fleets and continues to expand its value-added warehousing and distribution network, it will drive strategic change," says Armstrong. "Those 3PLs that could be most affected include DHL Supply Chain & Global Forwarding, FedEx SupplyChain, GENCO, OHL, UPS Supply Chain Solutions, and the smaller e-commerce fulfillment niche players like eBay Enterprise (formerly GSI Commerce) and Innotrac."

While Amazon outsources very few functions to 3PLs, Menlo Worldwide Logistics has been a key beneficiary from Amazon's growth, having significant portions of business awarded to it in 2013, he adds. "It's this kind of resiliency that will be a key differentiator in the 3PL marketplace moving forward."

Balancing act

Resiliency and balance are not mutually exclusive qualities, maintains John Langley Jr., Ph.D., at the Pennsylvania State University. Indeed he argues that the Armstrong rankings reflect more global diversity of gross revenue, thereby challenging the "80-20 Rule." Also known as "The Pareto principle," it states that roughly 80 percent of the effects

Continued on page 56S



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Armstrong & Associates Top 50 Global 3PLs

Rank	Third-Party Logistics Provider	2013 Gross Logistics Revenue (USD Millions)*
1	DHL Supply Chain & Global Forwarding	31,432
2	Kuehne + Nagel	22,587
3	DB Schenker Logistics	19,732
4	Nippon Express	17,317
5	C.H. Robinson Worldwide	12,752
6	CEVA Logistics	8,517
7	DSV	8,140
8	Sinotrans	7,738
9	Panalpina	7,293
10	SDV (Bolloré Group)	7,263
11	DACHSER	6,627
12	Toll Holdings	6,266
13	Expeditors International of Washington	6,080
14	Geodis	5,828
15	UPS Supply Chain Solutions	5,492
16	GEFCO	5,300
17	J.B. Hunt (JBI, DCS & ICS)	5,224
18	UTi Worldwide	4,441
19	Agility	4,415
20	Yusen Logistics	4,042
21	IMPERIAL Logistics	3,923
22	Hellmann Worldwide Logistics	3,433
23	Unyson Logistics	3,374
24	Damco	3,212
25	Burris Logistics	3,119
26	Schneider Logistics & Dedicated	2,850
27	Norbert Dentressangle	2,782
28	Kintetsu World Express	2,718
29	Kerry Logistics	2,575
30	Pantos Logistics	2,546
31	Sankyu	2,293
32	Ryder Supply Chain Solutions	2,280
33	FIEGE Group	2,090
34**	Coyote Logistics	2,000
34**	XPO Logistics	2,000
35	BDP International	1,900
36	NNR Global Logistics	1,745
37	Wincanton	1,695
38	Total Quality Logistics	1,621
39	Logwin	1,620
40	Nissin Corporation/Nissin Group	1,611
41	APL Logistics	1,586
42	Americold	1,580
43	Menlo Worldwide Logistics	1,540
44	GENCO	1,509
45	BLG Logistics Group	1,470
46	Transplace	1,400
47	FedEx SupplyChain/FedEx Trade Networks	1,387
48	Landstar	1,301
49	OHL	1,290

*Revenues are company reported or Armstrong & Associates, Inc. estimates and have been converted to USD using the average exchange rate in order to make non-currency related growth comparisons. **Tie

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Armstrong & Associates Top 50 U.S. Domestic 3PLs

Rank	Third-Party Logistics Provider	2013 Gross Logistics Revenue (USD Millions)*
1	C.H. Robinson Worldwide	12,752
2	Expeditors International of Washington	6,080
3	UPS Supply Chain Solutions	5,492
4	J.B. Hunt (JBI, DCS & ICS)	5,224
5	Kuehne + Nagel (The Americas)	5,046
6	Exel (DHL Supply Chain - Americas)	4,600
7	UTi Worldwide	4,441
8	Unyson Logistics	3,374
9	Burris Logistics	3,119
10	Schneider Logistics & Dedicated	2,850
11	DB Schenker Logistics (The Americas)	2,838
12	CEVA Logistics (The Americas)	2,641
13	Ryder Supply Chain Solutions	2,280
14	Panalpina (The Americas)	2,188
15	Coyote Logistics	2,000
15	XPO Logistics	2,000
16	BDP International	1,900
17	Total Quality Logistics	1,621
18	Americold	1,580
19	Menlo Worldwide Logistics	1,540
20	GENCO	1,509
21	Transplace	1,400
22	FedEx SupplyChain/FedEx Trade Networks	1,387
23	Landstar	1,301
24	OHL	1,290
25	Cardinal Logistics Management	1,200
26	Swift Transportation	1,189
27	Werner Enterprises Dedicated & Logistics	1,138
28	NFI	1,091
29	Damco (The Americas)	1,007
30	syncreon	1,000
31	APL Logistics (The Americas)	993
32	Penske Logistics	968
33	Echo Global Logistics	884
34	Yusen Logistics (Americas)	821
35	Ruan	807
36	Transportation Insight	803
37**	Jacobson Companies	800
37**	Neovia Logistics Services	800
38	England Logistics	798
39	Agility (The Americas)	795
40	ModusLink Global Solutions	755
41	Ingram Micro Logistics	734
42	Hellmann Worldwide Logistics (The Americas)	721
43	New Breed Logistics	648
44	U.S. Xpress Enterprises	615
45	Kenco Logistic Services	580
46**	Crane Worldwide Logistics	574
46**	Freightquote.com	574
47	DSV (The Americas)	570

*Revenues are company reported or Armstrong & Associates, Inc. estimates and have been converted to USD using the average exchange rate in order to make non-currency related growth comparisons. **Tied.





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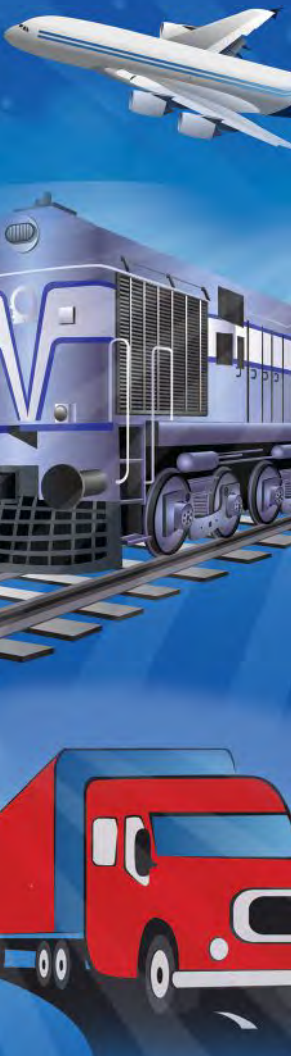
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come from 20 percent of the causes.

“This translates into the way the economy is functioning now, with non-asset based 3PLs having much greater leverage for buying asset-based services,” says Langley.

He also observes that domestic trucking supply and demand drives a lot of pricing pressure these days, which encourages logistics managers to spread their business around. “Asset-based providers are having a resurgence,” says Langley. “At the end of the day, someone has to own the assets, and we see them now dealing more directly with retail and *Fortune 500* shippers.”

Adrian Gonzalez, the founder and president of Adelante SCM, a peer-to-peer networking community for logistics professionals, agrees that a balanced transport portfolio is ideal. “Logistics managers are trying to mitigate risk by using asset-based carriers for dedicated fleet control

operations,” he says. “This is not only true in the truckload segment, but also in intermodal. Shippers have to weigh the benefits of flexibility against the advantages of having predictable routes.”

Non-asset based players resemble “technology providers,” more than ever, Gonzalez adds, noting that increased focus on customer relationship management is redefining the 3PL arena.

“Not just regionally, or domestically, but all around the world, he says. “While someone has to own the physical assets, many 3PLs are becoming much more reliant on cloud computing to provide seamless transparency for the shipper. Asset-based giants are also realizing the advantages of adapting to new IT technologies.”

Gonzalez maintains that through the years, service providers and software vendors have “busted out of their boxes” via mergers and acquisitions, new business models, and new product development to

What’s the ROI on a managed transportation services relationship?

Steve Banker, director of supply chain solutions at ARC Advisory Group, feels that measuring the return on a managed transportation service (MTS) relationship will become increasingly important to shippers.

In an MTS arrangement, a shipper contracts with a third party to plan and execute their moves for them. “In other words, instead of having internal planners orchestrate and execute moves, those planners are in the employ of the MTS provider, but work on behalf of the shipper,” says Banker.

While there’s much fine research on logistics service providers (LSP) and their overall relationships with their clients, there is a scarcity of

research focused on specific LSP service lines such as warehousing, freight forwarding, and MTS. A recent survey done in conjunction with Peerless Research Group (PRG), the research division affiliated with *Logistics Management*, was recently conducted to correct this. Results will be shared in a joint webcast to take place on July 10 (logisticsmgmt.com/3pl14).

“Our goal was to determine the ROI of MTS arrangements, to develop criteria that would sort respondents into a top and bottom performers category, and then to look at what top performers were doing differently from other respondents,” says Banker. “This allows shippers engaged in MTS relationships to benchmark their performance.”

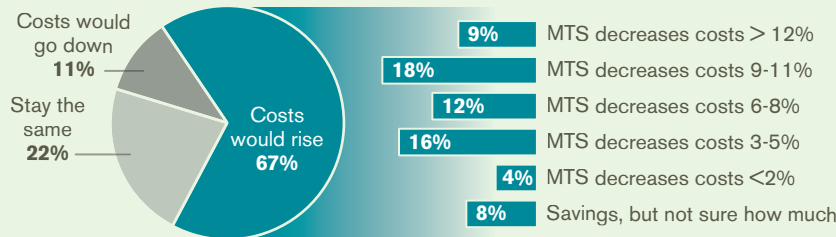
Banker has plenty of company in the 3PL analyst community when it comes to measuring the wants and needs of shippers. “It’s really quite simple,” he concludes. “All shippers want is sterling service. In the end, it doesn’t matter how few or how many players are involved.”

Steve Banker will be joining our 3PL analyst panel in our State of the 3PL Market Webcast on Thursday, July 10, to share the findings of this new study.

Shippers with managed transportation services (MTS) relationship

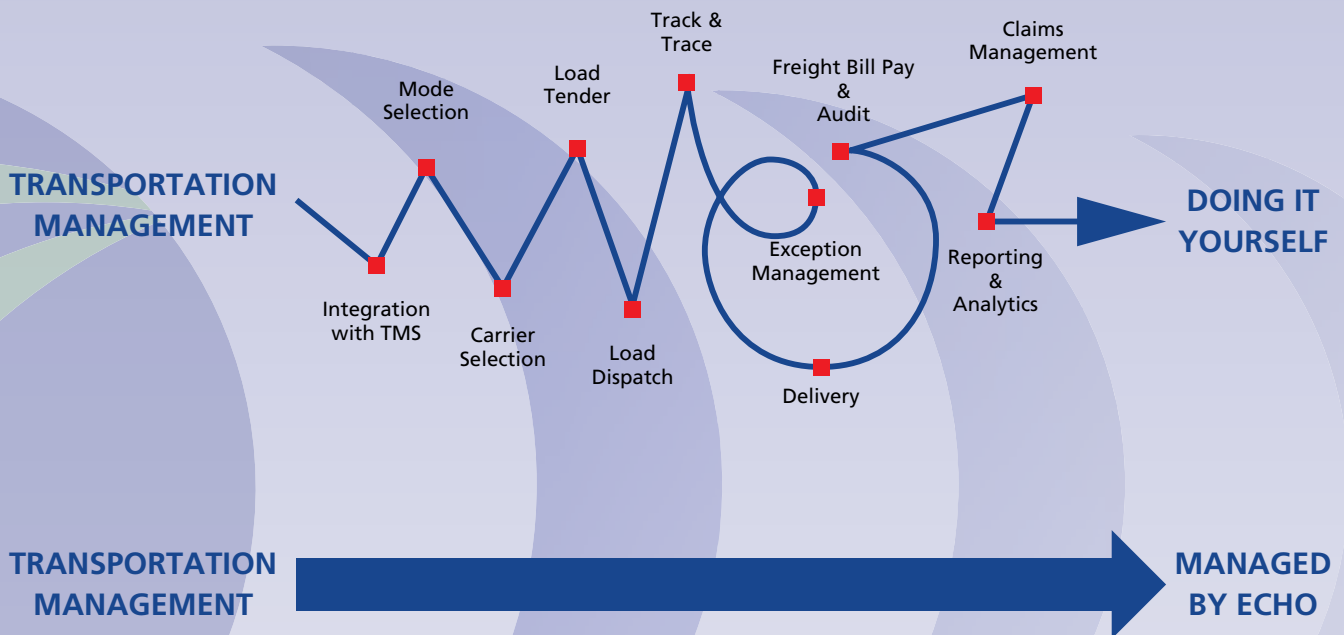
Freight costs if not working with MTS provider

Freight savings among those that achieved savings



Source: ARC Advisory Group/Peerless Research Group (PRG)

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pursue new growth opportunities, and to provide manufacturers and retailers with more complete “end-to-end” supply chain solutions.

“In the past, you had a box for freight forwarder, a box for broker, a box for warehouse operator, and so on,” Gonzalez says. “At the same time, logistics managers had a box for parcel shipping solution, a box for fleet management application, and a box for outbound transportation solution.” Today, he says, the boxes and labels of yesterday are giving way to a single amorphous category: providers of supply chain software and services.

“A logistics service provider can offer its own transportation management system while still being a 3PL and software vendor,” says Gonzalez. “It can also be a B2B connectivity service that facilitates the exchange of data, documents, and other information with carriers and other trading partners.”

Those distinctions, he argues, are becoming less important. For Gonzalez, the only question that still matters is the first one manufacturers and retailers must ask themselves when defining their supply chain strategies and initiatives: What are our desired outcomes?

Magic Quadrant

Analysts for The Gartner Group are more concrete when it comes to defining the role of the 3PL. For them, the logistics service provider (LSP) predominantly operates a business that moves, stores, or manages products or materials on behalf of a shipper without ever taking ownership of such products or materials.

In its annual *Magic Quadrant for Global Third-Party Logistics* report, Gartner considers 3PLs and LSPs to be synonymous. “Increasingly, 3PLs have extended their services beyond the basics, providing opportunities to increase their value and resolve additional customer supply chain challenges,” says Greg Aimi, Gartner’s director of supply chain research and *Magic Quadrant* co-author.

For example, these services include returns and repair processing,

assembly and kitting, packaging, postponement, shipment consolidation, and cross-docking. In some cases, 3PLs also offer fourth-party logistics provider (4PL) or lead logistics provider (LLP) services. Customers use 4PL/LLP as a single management team to oversee and coordinate other 3PLs and carriers on their behalf.

“Large multinational and global manufacturers, distributors, and retailers are requiring their 3PLs to offer a broader set of consistent and reliable services across more and more countries, and to integrate those services across end-to-end business processes so that they might be able to use them as a global preferred provider,” explains Aimi.

As a consequence, adds Aimi, the 3PL industry is progressing along a “maturity spectrum” in accordance with these new customer requirements, through a combination of acquisition and organic growth strategies.

“This Magic Quadrant is intended to chart the evolution of the largest 3PLs as they improve their ability to become a global preferred provider for

Magic Quadrant for global third-party logistics providers



Note: The scoring and hence the placement of dots on the graphic is done on a relative scale—that is, the 3PL providers are rated in comparison to each other to determine their location versus being placed on an absolute grid.

Source: Gartner (May 2014)

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their customers,” says Aimi. “Logistics and supply chain executives can use this research to better understand 3PLs and their capabilities when evaluating and selecting the right set of providers to meet their global logistics needs.”

Above the radar

Aimi’s words of advice should resonate with the world’s largest logistics provider, DHL, which has just published the second edition of its *Logistics Trend Radar*.

The current report builds on the recent developments already identified in 2013, introduces new trends, and then sketches a future landscape for logistics professionals and the challenges they will face, but also outlines solutions that are underway—especially multi-channel retailing and predictive purchasing.

Some of the new trends the report highlights include omni-channel logistics, or the integration of different offline and online shopping channels;

anticipatory logistics, or the application of big data analysis of customer product searches in order to send a shipment before the customer places an order; and crypto payment, the universal payment systems that allow global cross-currency payments to clear in seconds.

According to researchers, the *Trend Radar* report serves as a panoramic 360 degree view across the whole breadth of the logistics landscape. Based on this overview, the DHL research team will further explore selected trends in a “deep dive” format, based on research in cooperation with customers, research institutes, and industry experts.

“We combine our expertise with input from academia and other partners,” says Markus Kuckelhaus, DHL’s director of trend research, adding that the *Trend Radar* is a good starting point for logistics professionals wanting to prepare their logistics network for future challenges.

Q1 TIA report shows annual gains despite tough winter conditions

Third-party logistics (3PL) services providers weathered the harsh impact of the winter weather in the first quarter in solid fashion, according to the *Q1 2014: TIA 3PL Market Report* recently released by the Transportation Intermediaries Association (TIA).

The report is based on monthly data from TIA member companies who submit real operating data and respond to questions on business conditions affecting the 3PL sector. Types of questions that the member companies’ answer include: number of shipments by mode; total billing; and gross margins. Other data collected are customer-based forecasts to offer up expectations of near-term business volume.

Total invoiced revenue in the first quarter for all TIA member study participants—at roughly \$2.56 billion—was up 10.2 percent compared to the first quarter of 2013, and total shipments—at 1,381,058—were up 2.7 percent annually. First quarter invoice amount per shipment—at \$1,856—rose 1.6 percent annually, and profit margin—at 13.4 percent—was off by 20 basis points.

TIA reported that 70 percent of 3PL revenue

came from truckload, which was followed by intermodal at 18 percent, and less-than-truckload at 10 percent. Miscellaneous activity within warehousing, air, and other services represented 2 percent of first quarter 3PL revenue.

LTL shipments were up 23.7 percent compared to the first quarter of 2013, with revenue up 20.4 percent. Intermodal shipments saw a 4.3 percent increase, and revenue was up 12 percent. Truckload shipments were down 0.2 percent and revenue headed up more than 10 percent.

According to Robert Voltmann, president and CEO of TIA, the first quarter overall saw continued growth in freight volumes, coupled with some weather-related shifts with intermodal and LTL being a little less affected than truckload was in the first quarter.

“Because capacity is tightening, we still see top line revenue rising and continue to see compression on company margins,” says Voltmann. “The margin effect is a general trend, and it’s because our members are paying more for trucks, and spot shortages are not across the board. When these shortages are across the board, we’ll see prices go up even higher and see margins start to rise.”

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The nearly 25 percent annual increase in LTL shipments for the first quarter marks the highest increase for that mode, according to TIA, and it also was the first time in four quarters that truckload volume saw an annual gain, just barely at 0.2 percent.

The strong intermodal output in the first quarter continues to highlight the fact that the mode is gaining in traction among 3PLs.

Voltmann said that over the last four quarters, TIA's reporting members shifted 5 percent of their truckload freight to intermodal.

"The reason for that is a combination of capacity, shipper desires, and that the railroads were less affected by the weather in the first quarter," Voltmann explains. "Shippers are expressing more interest in anything that could go intermodal and moving it that way. We are working with our members to better understand

where intermodal makes sense for them and what the tradeoffs are."

Even though the first quarter saw slight declines in total shipments and revenue, and a nearly 2 percent gain in invoice amount per shipment, Voltmann says it's reasonable to assume that if this past winter was not so prolonged there could have been annual improvements across the board.

The main driver was tight capacity that is giving carriers pricing power, which some industry analysts think could head up 4 percent to 6 percent this year.

Also contributing to the expected increase are the new hours-of-service regulations; new engine requirements and related costs; the pending arrival of electronic logging devices in the coming years; and what Voltmann describes as a "regulatory avalanche" continuing to make its mark.

—Jeff Berman, Group News Editor

Echo Global Logistics acquires One Stop Logistics Inc.

Echo Global Logistics, a non-asset based freight brokerage company and a provider of technology-enabled transportation management services, recently reported that it has acquired the assets of One Stop Logistics Inc., a Watsonville, Ca.-based transportation brokerage.

The purchase price, according to Echo, was \$37.3 million. One Stop was established in 1998 and is a non-asset provider of less-than-truckload (LTL) and truckload services and has locations in Northern California and Florida.

Other services provided by One Stop include international full container load and less-than-container (LCL) shipments via ocean or air transit; U.S.-based temperature-controlled services, with hundreds of vendor partners specializing in truckload and LTL temperature controlled freight; air- and ground-based expedited services; and trade show and convention services

One Stop is led by Steve Brown, who has been with the company for 15 years, and will serve as regional vice president of the entity, which will now conduct business under the Echo Global Logistics Inc. moniker. Echo added that all existing One Stop staffers and management will remain with the company.

"One Stop is a profitable and impressive operator in the market for over the road transportation solutions," says Douglas Waggoner, Echo CEO. "With this acquisition, we continue to position Echo for further growth by expanding our national coverage and leveraging our technology, our carrier network, and our service offering."

This is Echo's third acquisition of 2014. The company brought Jacksonville, Fla.-based Comcar Logistics, a non-asset based truckload brokerage, into the fold in February and Online Freight Services, a third-party logistics company headquartered in Mendota Heights, Minn., in January. Echo has done 19 tuck-in acquisitions dating back to 2007.

"We have a pipeline [of acquisition targets] we are working out of and expect to do more this year," Waggoner told *Logistics Management* recently. "We like the strategy because it's relatively low-risk and quick to integrate the acquired companies into Echo. We can add geographic presence, existing customer relationships, and sales force, and it's a nice way to grow. Plus, once we acquire a company, typically within two or three years, they double in size under Echo as we can help them grow faster."

Cowen & Co. analyst Jason Seidl wrote in a research note that Echo is strategically positioned

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to benefit from the fragmented and highly competitive brokerage market.

"Indeed, the current challenges facing the transportation industry and logistics sector may have a bright side for acquisitive companies such as Echo," Seidl writes "Transportation brokers continue to

see their margins squeezed, which could weigh on industry profitability and returns, making some players who were previously on the fence on whether to consider acquisition offers more likely to do so now."

—Jeff Berman, Group News Editor

3PLs must make adjustments in China

Beyond just export and freight forwarding services, third-party logistics providers (3PLs) in China are now offering pick-and-pack services for direct-to-customer shipments in the U.S. and Europe, observes Rosemary Coates, president of Blue Silk Consulting and author of *Rules for Sourcing and Manufacturing in China*.

"3PLs will prepare individual shipments for end customers, then overpack and consolidate to take advantage of bulk shipping to a U.S. or European distribution hub," says Coates. "For example, Nike has a web store (Nike ID) where you can design your own shoes for color and style. The shoes are then manufactured in Shenzhen and then shipped to U.S. customers via UPS consolidation to the UPS Louisville hub."

Incoming containers are broken down and individual pairs of shoes are sent on their final route to customers via UPS domestic delivery. No inventory is kept in any part of the supply chain, as the shoes are manufactured on demand.

"Smaller 3PLs and freight forwarders without global networks, processes, and IT systems cannot compete with the larger, more sophisticated global companies," says Coates. "This is key. Without global IT systems, the ability to serve customers in China or any region of the world is limited."

According to Coates, as supply chains become

more global and more complicated, IT systems become the backbone to supplying critical supply chain information. Other key observations include:

- Operations people need to know where supplies are and how they are moving to support production.
- Customers want to know where their orders are and when they will arrive.
- Customs authorities are getting more sophisticated and require advance electronic information for clearance and collection of duty.

"Third-party logistics providers that are investing in more automation and IT will attract more and larger customers," adds Coates. "In addition, 3PLs that have process engineers to design new services for customers will also win new business through the creation of innovative solutions."

—Patrick Burnson, Executive Editor





Why Stop at Supply Chain Excellence? Empower Your Entire Operation with One Enterprise Logistics Provider.

Nearly 75 percent of shippers surveyed in the *2014 18th Annual Third-Party Logistics Study* prepared by Dr. C. John Langley and Capgemini Consulting are now leveraging the benefits of outsourced logistics partnerships. Those shippers are also seeking a more unified approach to logistics management. More than half of respondents are narrowing their focus to work with fewer third-party logistics (3PL) providers.

Why? Many shippers who realized initial savings using multiple niche providers now find fragmented vendor management to be counterproductive, complex and costly. To simplify these processes, reduce total cost of ownership and improve response time to rapid changes in supply and demand, more North American companies are looking for an **Enterprise Logistics Provider**. Capable of much more than a traditional 3PL, Enterprise Logistics Providers carry a best-in-class portfolio that improves every tactical and strategic business process from order to cash and vendor to customer.

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With a robust end-to-end service offering including domestic transportation sourcing in all modes, international logistics management, private fleet consulting, transportation management system (TMS) applications, warehouse sourcing, freight payment and audit, supply chain analytics, LEAN consulting, secondary packaging and more, an Enterprise Logistics Provider helps companies move products and information more fluidly to and through the supply chain. At first glance, the service offerings of third-party providers and Enterprise Providers appear similar, but the latter has many advantages that shippers should carefully consider when selecting a partner. An Enterprise Logistics Provider does the following:

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Global Supply Chains: When uncertainty is a CERTAIN FACTOR



Predicting the future is never easy, but MIT attempted to do just that when its *Supply Chain 2020 Project* identified six major trends that supply networks will have to cope with in the years ahead.

By Larry Lapide

“**T**he future ain’t what it used to be.” That somewhat nonsensical quote from the former New York Yankee baseball player Yogi Berra was the whimsical, yet apropos tagline for the MIT Supply Chain 2020 (SC2020) Project. I managed the project’s launch in 2004, and it continues today, focusing on what excellent supply chains would look like 10 to 15 years in the future.

Having come from a largely consulting background prior to joining MIT’s Center for Transportation & Logistics, I initially thought that successful supply chains in the future would leverage best practice trends that I had been seeing over the past five to 10 years, such as Just-in-Time (JIT) and lean

operations as well as supply chain visibility and collaboration. After peeking into the future for a while, I realized these trends were based upon where the world had been recently moving, not necessarily on where it might be in the future. And, these so-called best practices might be rendered useless. I came to realize that my own view of the future “wasn’t what it used to be;” hence, the genesis of the SC2020 Project tagline.

The MIT team decided to approach the project using a Scenario Planning methodology, rather than try to do the impossible and predict the state of the world 10 to 15 years out. Our interests moved to identifying reasonable scenarios for the future, such as the worlds that supply chains might be operating in as well as the uncertainties around them. The six major factors that we feel will most affect future supply chains are: 1) the



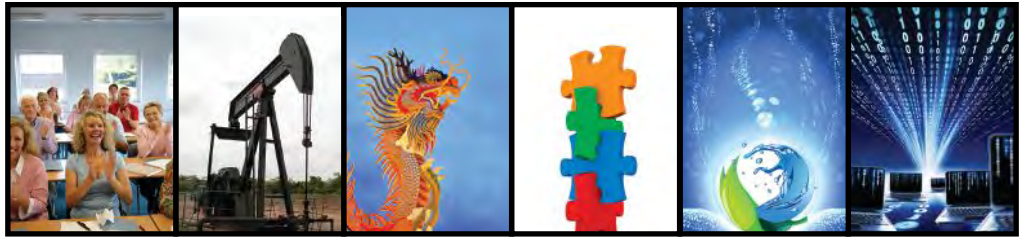
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aging of developed countries; 2) oil prices; 3) a power shift toward the East; 4) trading bloc formation; 5) globalized Green Laws; and 6) pervasive technologies.

Despite the Great Recession we have experienced since the launch of this initiative, my view of the importance of these major factors has not been altered. That is because these long-term global shifts happen as a backdrop to short-term economic conditions. Indeed, the Great Recession has more than likely either delayed or accelerated their impact on future global supply chains. Their trends and implications are described on the following pages.

1. Aging of developed countries. Early in the MIT project, I invited Dr. Joseph F. Coughlin, who directs MIT's Age Lab, to discuss his research in what he terms "Disruptive Demographics." The research looks at how consumer wants and needs are changing based on the aging of populations. He showed a key chart that depicts the world's population in 1996 in contrast to what is being predicted for 2025. The chart highlighted the differences between "less developed countries" and "more developed countries" and also showed the age distributions for them. A major takeaway is that the world's population is growing larger and older. However, and more importantly, the more developed countries are getting older, while the less developed are getting younger. This trend will have significant demand-supply ramifications for future supply chains.

Relatively speaking, older people are more affluent and consume more goods, while younger people possess the physical prowess and stamina to do the work needed to create them. Thus, from a supply-demand perspective, in the future there will be significant dislocations between the consumers buying the goods and the workers needed to supply them.

From the demand side, older populations will demand a different set of goods as they age. Instead of just standalone products, they will favor total solutions that include a host of services along with physical goods. As they age, older people will expe-

rience physical, hearing, and sight challenges. They will need goods and services to help them overcome these challenges to their quality of life. These might include, for example, in-home monitoring of their diets and health, as well as more home delivery to satisfy their in-home needs.

From the supply side, this trend also means the populations buying the largest share of goods will be located in different countries than those that can do the work necessary to create them. More developed, older consuming countries will need to solve this problem by importing more goods, increasing labor productivity, and expanding their workforce in at least two ways.

The first would be to source labor from other countries by allowing more immigration from less developed countries, while the second would be to harness the potential of workers previously considered unemployable. More automation might be needed in plants and warehouses to support workforces that are comprised of diverse sets of immigrants, older workers, and mentally and physically handicapped workers.

2. Oil prices. Since late 2004, oil prices have crept upward, albeit in an unsteady fashion, as prices have become more volatile in the short run. When we first noticed that this was happening to the price of oil—the critical resource needed to fuel economies and drive supply chains around the world—it was identified as one of the most important macro factors for the SC2020 project to investigate. While the price of a barrel of crude oil was well below \$40 at the time, we initially postulated an oil price reaching \$40. Shortly thereafter, we changed it to \$200 to \$400 per barrel by 2020.

We uncovered a 1980 U.S. Department of Energy chart historically depicting the real prices of oil during a period of almost 18 years that we called the Era of Cheap Oil. From around 1986 to late 2004, the real price of oil varied from about \$20 to \$30 per barrel. After that, the price swung wildly in the short run, while climbing to its current price hovering around



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\$100 per barrel—three to more than five times the price during the Era of Cheap Oil—in just nine years. (The recent increase in natural gas production in the U.S. portends a long-term future with more reliance on this energy source, however, it will take decades to create the demand and supply chain needed to replace the lion's share of the dependency on oil.)

My prediction is for the climb to continue because the long-term price increases are due to rising global demand for oil from developing economies, as well as to the increased cost of extracting oil from new and more difficult places. (One could argue that the BP oil spill in the Gulf of Mexico highlighted the extra costs that will be incurred by drilling in places never drilled in before—costs relating to additional safeguards and the use of innovative drilling techniques.)

The Era of Cheap Oil also happened to coincide with a time when companies were innovating supply chains that were global, fast, responsive, and relatively inexpensive—largely driven by inexpensive oil. Now that the Era of Cheap Oil is history, these will have to be adapted to align to the more expensive oil regime. Today's networks were driven by cheap oil that rendered outsourcing, offshoring, and JIT programs cost effective. Worldwide inventories were drastically reduced through the use of faster, yet less energy efficient, transport modes that enabled goods to be

cost effectively moved around the world. Companies favored the use of air rather than ocean freight, and truck and parcel rather than rail and barge, to transport goods.

The demise of cheap oil also alters the relationship between fixed and variable manufacturing costs (that are significantly dependent on oil/energy costs). Industries that routinely operate plants 24/7 may need to shut down operations occasionally to save on the higher variable costs. This wasn't on the radar screen during the Era of Cheap Oil. And, this more expensive oil could favor smaller and less fixed-cost-based manufacturing plants.

From a future supply network structure, more expensive oil will favor shorter supply lines than those that were cost justified under cheap oil. This is especially true for outbound (customer facing) supply lines that are the least energy efficient because their transport modes tend to be parcel and truck, rather than the rail and ocean often used for inbound supply. This will tend to geographically cluster source, make, and delivery functions to create global supply networks that are cost and energy efficient, rather than cost and inventory efficient.

3. Power shift toward the East. While the rapid economic rise of China makes up much of today's headlines, there has been a gradual shift of economic power toward the East in general. Relatively speaking, the U.S. and Western European dominance of world trade has been shrinking over time.

Many of the world's largest companies, especially those that manufacture and market commodity goods, are now based outside the U.S. and Western Europe. In 2010, China surpassed Japan as the second largest country in terms of GDP, having already surpassed Germany in 2007 when China became the third largest. The U.S. share of GDP has been steadily declining since 2001 (according to IMF data), as has Western Europe's over a longer period of time.

An interesting book, *The Post-American World* by Fareed Zakaria, echoes the trend toward a future in which Western economies no longer rule the roost. (Indeed, some might argue that the Great Recession we recently experienced may well be the inflection point of this power shift.) As Zakaria's book starts out: "This is not a book about the decline of America, but rather about the rise of everyone else." While not necessarily bad news for the West, it does mean that there will be more competition among global companies for scarce raw materials, as well as for capitalizing on revenue opportunities in the growing Eastern nations.

Implications of this change for Eastern countries include a shift from largely manufacturing based economies to more consuming oriented ones. In addition, these countries' populations will become more educated and will compete more with the West in product innovation—where the West has been dominant for a very long time.

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4. Trading bloc formation. The book *The World Is Flat: A Brief History of the Twenty-First Century* by Thomas L. Friedman postulates a future in which goods, information, and ideas move around freely, virtually unrestricted by country borders. I suspect most supply chain and manufacturing professionals support this view because they take pride in being able to make, move, and sell goods anywhere in the world. The Flat World is a great, altruistic world that I hope to live in during my golden years. However, I believe it is an optimistic and only a remotely possible future. Similarly, another remotely possible scenario would be an extreme backlash to globalization that results in a future that we termed the "Alien Nation" scenario in the SC2020 Project. This is a future in which there is limited cooperation and trade among nations, also cynically called "the Old Europe."

Another more likely scenario might be the formation of three to four tightly coupled trading blocs that are essentially spheres of influence around a few dominant or "magnet" countries. For example, there might be trading blocs with the majority of their economic activities and supply chains centered on the U.S., Western Europe, China, and possibly Japan. Under this scenario, the majority of international trade would take place within each bloc, with less cross-bloc trading taking place than would be expected under a Flat World scenario.

There are some trends that portend this trading bloc future. In the Western Hemisphere, there are a variety of trading partnerships in place, including NAFTA. The European Union (EU) has been formed and a common currency has been implemented. China has been developing long-term relationships with businesses in Australia, especially for the sourcing of commodity goods, and for oil in Africa and the Middle East.

Two of the factors discussed above also support trading bloc formation.

As oil prices increase over time, the shortening of supply lines might drive a natural evolution to blocs, as companies geographically cluster their source, make, and deliver functions. In addition, more developed older countries might source younger labor from their less developed neighboring countries to solve their labor shortages. North America might ramp up immigration from Latin America, while Western Europe might source more labor from Africa. Japan and China might source more labor from the less developed Asian countries. (Note: China's recently reversed one child policy caused it to become one of the world's oldest countries.)

5. Globalized Green Laws. A U.S. Environmental Protection Agency report published in April 2009 stated that the first and second ranked sources of greenhouse gas emissions come from the electricity generation and transportation industries, respectively. This implies that manufacturing/supply chain activities are major sources of emissions. Global emissions will need to be reduced over time to help save the Earth, and more Green Laws will be needed over time, globally, to achieve this. Energy efficiency will become virtually synonymous with cost efficiency, so companies will have incentives to become more green as they cost effectively manage supply networks under a rising energy cost regime.

Another area of evolving and increasing global Green Laws deals with the reduction of waste materials that pollute the Earth's land and water. These laws will affect supply chains in at least three ways. The first is that more future products will be designed to be green, comprised of biodegradable and non-toxic materials.

The second is that the end-of-life disposal of products will be more regulated on a global basis. Some of this regulation is already in place in California, the EU, and in Germany, where auto makers are ultimately responsible

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for the environmentally safe disposal of cars. In the U.S., Dell and HP have recycling programs in that they recycle computers and extract materials from them before the computers are put into dump sites. Such recycling programs will require companies to establish better competencies in reverse logistics.

Thirdly, in the future globally branded companies will need to establish Supply Network Compliance programs. To protect the brand image of their products, companies will need to ensure that they comply with Green Laws in countries in which they do business. Moreover, they will need to ensure that their upstream suppliers comply as well on a worldwide basis.

6. Pervasive technologies. In my view, technology is an enabler of business processes. It does not directly drive future supply chains. However, it can make innovative processes possible and speed up their evolution.

Tom Friedman's *The World is Flat* is one in which individuals work virtually anywhere and in any place, and also communicate freely across the Internet. While this is a common belief about the future of work, there

is a caveat to this premise. Because the U.S. essentially manages the Internet, the likely future scenario is one in which the Internet is fragmented and competes with other networks while at the same time being almost seamlessly interconnected with them. Thus, the future should see more worldwide trading partner electronic collaborations via the Internet and wireless remote communication devices, as well as social networks or collaborative communities such as Facebook. These networks will be enabled by the ability of individuals to communicate and access information globally.

Meanwhile, in the future there will likely be fuller supply chain visibility of worldwide goods, assets, and inventories enabled via tracking technologies including GPS and smart tags such as RFID devices. This will allow companies to fully view and virtually manage end-to-end supply chains. Additionally, there will be a much better melding of the virtual and physical worlds, enabled by supply chain computer modeling. Managers will use computer models to plan and manage supply chains with software that closely resembles the gaming software our younger generation is playing with today. Via computer gaming, future managers will be able to plan and manage

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in real time by simulating and optimizing what might happen to their physical supply chains, and take immediate action to execute their plans.

Understanding possible futures

The above macro factors provide some insight into what might happen by 2020, but even among them there are huge uncertainties as to exactly what the future would look like. In addition, there is uncertainty as to their speed of change and implications.

Under the Scenario Planning methodology, one peeks into possible (often extreme) futures to help identify robust long-term supply strategies today. Understanding possible futures also helps drive long-term decision making, as well as identify important sensors in the ground that companies might use to monitor events that may shape where the world is heading. Previous events—such as the fall of the Iron Curtain, President Nixon opening up trade with China, and China joining the WTO—portended the massive extent of globalization we see today.

Analyzing how to successfully run supply chains when operating under various future world scenarios can help companies deploy robust strategies today

that will go a long way toward achieving success in the future. □

This feature previously appeared in *Manufacturing Executive Leadership Journal*. It is reprinted with permission.

The following *Insight* columns by Lapide explore these trends in more depth:

1. “Disruptive Demographics,” *Supply Chain Management Review*, September/October 2007.
2. “Beyond the Green Hype,” *Supply Chain Management Review*, July/August 2008.
3. “A ‘Flat’ Future? Don’t Bet On It,” *Supply Chain Management Review*, September/October 2008.
4. “Scenario Planning for a Successful Future,” *Supply Chain Management Review*, November 2008.
5. “Fracking: A Game Changer?” *Supply Chain Management Review*, January/February 2014.

Dr. Lapide is a Lecturer at the University of Massachusetts, Boston and an MIT Research Affiliate. He is also the author of the Insights column in sister magazine Supply Chain Management Review. Lapide can be reached by e-mail at llapide@mit.edu.



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Managing global air freight costs

By Jeanne Dailey, Mohit Kumar, and Brooks Bentz, Accenture

Managing airfreight across complex global networks has never been more challenging. The rapid rise in fuel adversely affects air cargo carriers much more dramatically than other, more fuel-efficient modes, creating a widening economic gap.

The net result of this trend has been a relatively steep decline in air cargo volume worldwide over the past decade or more. Recent research by the International Air Transport Association (IATA) has revealed that containerized air cargo declined from 3.1 percent in 2000 to 1.7 percent in 2013.

The same study attributed a significant portion of this erosion to modal shifts from air to ocean or surface transport. This trend is likely to continue, despite the importance of air cargo, particularly for those companies with high-value products.

While capacity has not been a problem of late, the larger chal-

lenge stems from effective management of airfreight spend in a market where the cost of providing the service is seen to be rising.

Our goal over the next few pages is to describe a strategic approach for optimizing the expenditures in a way that simultaneously improves service and capacity. The strategic objective is aimed at converting the international lanes of air and ocean cargo to a network-based strategy of global capacity management.

For many, this requires a different way of thinking, different skills, capabilities, and tools. In this piece, we will discuss how to attack this problem and suggest solutions that can be “operationalized” to improve supply chain performance.

Maximizing utilization

The fundamental precept is based on a single, simple fact: Air cargo capacity stems from large, expensive assets. The best way

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to take cost out of the supply chain is to maximize the utilization of those assets, which is done by employing a network-based approach to sourcing capacity through what we refer to as “expressive competition.”

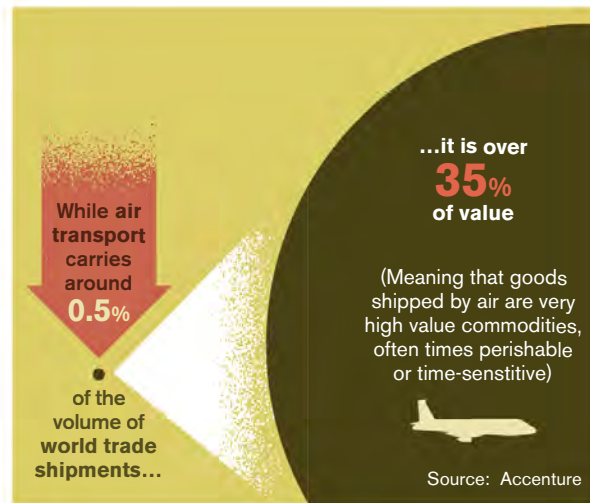
To successfully set up an event for sourcing global air-freight capacity, participation, alignment, commitment, and willingness to act and make decisions for the betterment of the company from every single stakeholder involved are a must.

A global airfreight sourcing event will have cross-regional synergies that will benefit both the providers and your organization. It will serve as an opportunity to proffer visibility to the client’s entire network, integrate networks, and formulate global versus regional partnerships.

The steps that need to be taken to coordinate a global event of this kind should take place in a pre-defined manner. However, before you can truly consider going out to the market with a strategy that will reduce costs, maintain or increase service levels, and secure capacity, you first need to know what your current global airfreight spend is—a number that is often more challenging to identify than one might think.

Companies frequently house data in multiple sources around the globe or rely on the service provider for volume and cost information; costs are captured on an “all-in” basis, versus being broken out by the contributing components; and, most deflating, is that data is not captured in a standardized fashion. Therefore, deciphering what you have and what is actually useful can be rather daunting, frustrating and time consuming.

Whether captured by the shipper or the provider, the



quality and quantity of data is significant. The more fragmented and decentralized a company is, the greater the risk of not having a complete and useful data set that reflects your current total spend.

Prior to the start of working with a global client, Accenture provided them with a data request that included all shipments within the past year. We were pleasantly surprised when the client immediately replied that this request would easily be fulfilled.

However, upon receiving the data, we were disappointed to find that their rate tables had not been updated in 16 months, and the entire data set was for less than 30 percent of their total global spend.

Airfreight cost factors include movement rates, surcharges and fees, and fuel and security charges. Most shipments have multiple charges with only some being controllable. The volatility of fuel, and the fact that shippers are also faced with varying supply and demand, makes it difficult to know if contracting or spot purchasing is more advantageous. Complex networks with diverse types of products from diverse industries (e.g., automotive, high tech, or healthcare) force shippers to react to consumer demands, which often require shorter lead times and lower predictability.

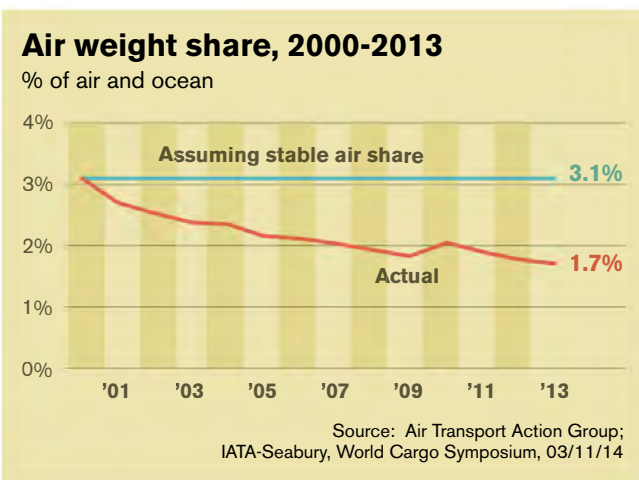
Understand your costs

Other cost contributors are related to the different business requirements associated with areas such as the product, origin/destination, equipment, lanes, and transit times, to list a few. Capturing each detailed requirement is absolutely necessary as these requirements most always incur costs, and you need to be able to capture those as part of your spend.

Usually the business or operations groups have an understanding of the requirements, and if standard operating procedures (SOPs) are documented and available, they’re usually the most reliable and accurate sources. In instances where there are no documented requirements or procedures, you may need to obtain the information from the carrier.

Once all perceived requirements have been compiled, it is worthwhile to gather the stakeholders and review that list. This is primarily due to the fact that we often find that what may have once been deemed as a requirement may no longer be necessary, thus eliminating any cost related to that requirement. Uncertainties exist every day, and with every shipment, but the better your understanding of your air freight requirements and spend, the easier it will be to effectively understand and control your costs.

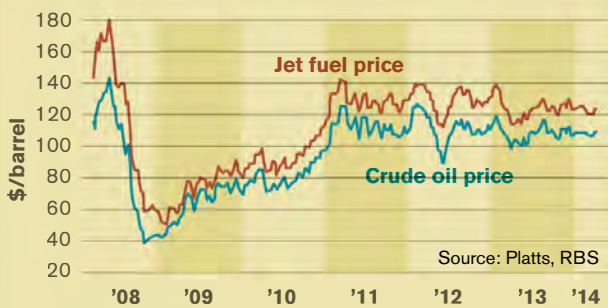
When the correct data and detailed requirements have been captured at a global level, you can begin to analyze all the information you have at a profile level. You can then evaluate key



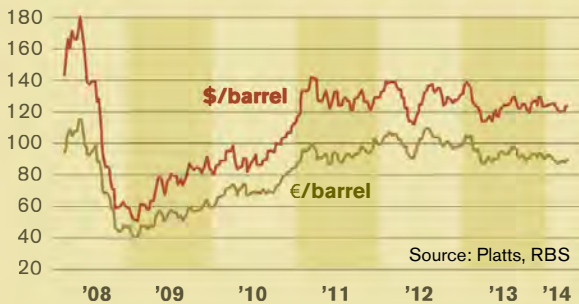
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% of air and ocean

Taking a longer term perspective of price movements



Impact of Euro/US\$ exchange rate movement



Source: IATA: Jet Fuel Price Movements

lanes by looking at the amount of volume leaving an origin, then delivering to a destination, broken out by region, country, and exact points or capturing the volume being hauled by a specific provider, once again by region, country, or other specific point.

Breaking down this type of information to the lowest possible level of detail will provide visibility to all your costs—and will enable you to identify areas of opportunity to improve rates and charges. Detailed cost breakouts will also help you better understand your competitiveness in today's marketplace.

There are multiple ways to compare your costs to others in the marketplace. Two approaches that we find most clients asking for are benchmarking and going out to the market with a competitive bid. Benchmarking can be a good source of information if you have a well-rounded sampling of comparable data.

The similarities should include: origins; destinations; special requirements (e.g., temp control, 'DanCom,' etc.); transit times; product; volumes; and routing which are often difficult to obtain, but necessary for a true "apples-to-apples" comparison.

Another crucial element in airfreight is the fuel surcharge. Volatility in jet fuel prices combined with volatility in exchange rates are adding additional pressures to the bottom line. Given the high volatility in fuel prices, fuel management is complex and properly the subject of a separate discussion.

How do carriers value your freight?

An often more effective approach to understanding where your costs stand up in the market, is to take all the data and requirements you've obtained and go ask the market how they value the freight you have to offer.

This is done annually through strategically sourcing global capacity that maps to existing and predictive freight flows. The process continues by qualifying a legitimate set of carriers and executing a sourcing event that will clearly let you see how your costs measure up to others, based on actual rates and pricing received from carriers that understand your freight flows, characteristics, and requirements.

In many of the sourcing events that we've conducted, there is a high promise for drastic cost reductions, but only if the rates are implemented correctly. While sourcing global airfreight bid is not an easy task, implementing one is even more difficult. One needs to setup a diligent process to ensure:

- Carriers implement rates in a timely fashion. Shippers need to check if the invoices post the implementation date and reflect changed rates.
- Various shipping stations are informed about the new rates and carriers to be used.
- SOPs are created, understood, and agreed upon on lanes where carriers' changes have taken place. As supply chain professionals, we want to ensure that the business continues to run smoothly, and an incomplete or incorrect SOP would affect our ability to change carriers in the future.

Another critical part of the implementation program involves confirming realization of promised savings to help gain stakeholder confidence that the rates put in place are realistic and meet the service level criteria set at the start of the contract. This not only ensures the carriers are charging as per the contract, but it also helps in creating a fact-based budget for the next year.

The good news is that despite the challenges associated with minimizing airfreight costs, there are processes companies can put in place that can help companies reduce waste and maximize the return for their spend. And, in today's digital world, data analysis can play a very important role in understanding your air freight costs and needs, as achieving these objectives begins and ends with data management to understand where you're starting from and the progress that you've made.

The endgame is producing a rigorous, well-disciplined and proven strategy that drives cost out of the supply chain. This is a win for providers because it makes for a more efficient operating environment, which in turn becomes a win for the shipper who gets better service at a more competitive price.

Brooks Bentz is a managing director in Accenture Strategy, Operations, which works with its clients to architect, build, and operate high performance supply chains. Jeanne Dailey, senior principal, and Mohit Kumar, a manager, also deliver operations services in Accenture Strategy.

Pacific Rim Report

By Patrick Burnson

Patrick Burnson is Executive Editor of *Logistics Management*. If you want to contact Patrick with feedback or a story idea, please send an e-mail to pburnson@peerlessmedia.com.



U.S. shippers want greater access to Japan

HIGH ON THE AGENDA OF President Barack Obama's state visit to Japan in April was to have a meaningful, bilateral discussion with Prime Minister Shinzo Abe on the Trans-Pacific Partnership (TPP), the free trade agreement that's now under negotiation between the U.S., Japan, and 10 other nations that could give shippers greater access to Japan's market.

Bruce Stokes, director of global economic attitudes at the Pew Research Center, says that U.S. and Japanese negotiators working on the TPP are currently stymied by "politically charged" issues. Furthermore, their resolution may require tough decisions that only their political masters can make.

And while such a breakthrough was not achieved during Obama's visit, Stokes maintains that Americans are broadly supportive of foreign investment, the TPP, and especially more trade with Japan.

"There is a widespread perception in much of Asia—in part a by-product of the trade wars between Washington and Tokyo in the 1980s—that Americans are protectionist," says Stokes. "If this was ever the case, it has not been so for some time, at least in principle."

According to Stokes, two-thirds of Americans say U.S. involvement in the global economy is a good thing, and about three-quarters say growing trade and business ties between the U.S. and other countries are desirable, up from 53 percent just four years ago.

Japan is currently the fourth largest U.S. trading partner. And in a new Pew Research Center survey, conducted this spring, 74 percent of Americans said increased trade with Japan is needed, up from 60 percent in 2010.

These supporters include 79 percent of Republicans; 78 percent of people ages 18 to 29; 72 percent of Democrats, and 73 percent of Americans age 50 or older. Better educated Americans, those with at least a college education, are particularly supportive of more commerce with Japan, at 84 percent. By comparison, only 51 percent of the public said it would like to increase trade with China.

Americans are also supportive of more foreign companies setting up operations in the U.S., something Japanese businesses, especially those in the auto sector, have been doing extensively since the 1980s.

In the Pew Research Center survey, 62 percent of

the public said that such investments would mostly help the U.S. economy. Notably, there are no significant partisan differences in such support for foreign investment between Democrats, Republicans, and Independents, including adherents of the Tea Party.

The TPP itself has majority support in the U.S. According to the new study, more than half (55 percent) of the public said that the TPP will be good for the country. This includes 59 percent of Democrats and 56 percent of Independents, but only 49 percent of Republicans. Young people are much more likely than their elders to back a free trade agreement with Asia-Pacific nations—65 percent compared with 49 percent.

"This broad American support for international

Japan is currently the fourth largest U.S. trading partner. And in a new Pew Research Center survey, 74 percent of Americans said increased trade with Japan is needed.

commerce, for increased trade with Japan, and for the TPP suggests the political climate in Washington for congressional consideration of an eventual TPP deal may not be as negative as it might appear given the current negotiating deadlock over details of the trade agreement," observes Stokes.

This does not mean, however, that Americans have dismissed their reservations about trade pacts. In the 2010 Pew Research Center survey, 55 percent of Americans said that free trade agreements lead to job losses, and 45 percent said that they push down wages. Back then, only 31 percent said that they bought economists' arguments that such deals lower prices for consumers.

So, the TPP could face more resistance if it ever comes up for approval by Congress.

"But first, Washington and Tokyo need to see if they can resolve their differences," says Stokes. "The trade plan may involve 12 nations, but Japan and the U.S. are by far the two biggest economies in the negotiations. And a deal is unlikely if Abe and Obama cannot make some accommodations."

Stokes says that in principle, the American public generally thinks a deal would be a good idea, "but the details will matter." □

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