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Logistics MANAGEMENT

September 2014

2014 Masters of Logistics

Who will win transportation's TUG OF WAR?

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+ MASTERS OF LOGISTICS WEBCAST
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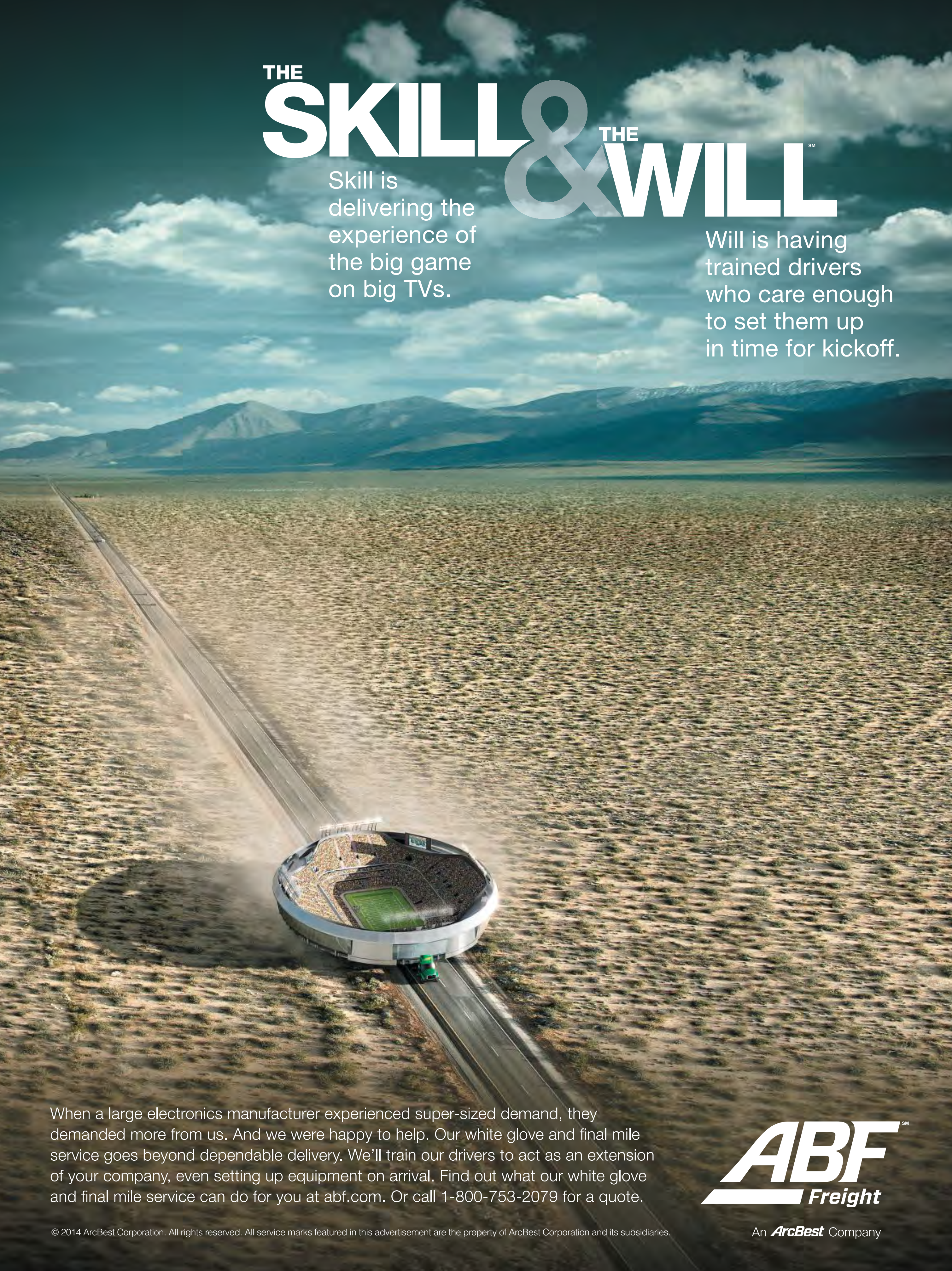
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LM management UPDATE

AN EXECUTIVE SUMMARY OF INDUSTRY NEWS

◆ **Tough times continue for USPS.** The United States Postal Service (USPS) had a net loss of $2 billion for the fiscal third quarter, compared to a $740 million net loss for the fiscal third quarter last year. However, quarterly operating revenue saw a gain at $16.5 billion, up 2 percent annually. The USPS has now suffered a loss in 21 of the last 23 quarters, a stretch going back nearly six years. Even with the slight increase in operating revenue, things remain muddled for the service. It remains hamstrung by its retiree health benefits prefunding payments, which it's been unable to meet due to a lack of capital. According to USPS CFO Joseph Corbett, the service continues to ask Congress to draft and sign legislation into law that would not only reduce the payments, but also develop a smarter delivery schedule, help it gain greater control over its personnel and benefit costs, and add more flexibility in pricing and products to provide the necessary cash flow.

◆ **Rate hike ahoy.** Member container shipping lines in the Transpacific Stabilization Agreement (TSA) proposed an across-the board general rate increase (GRI) of at least $600 per 40-foot container to all destinations, effective September 1. Carriers had filed increases in their individual tariffs in late July and subsequently began notifying shippers directly. TSA lines said that the planned GRI follows strong cargo demand and high vessel utilization levels in recent months, which forward bookings suggest will continue through September. With equipment, inland transport, and other cargo handling costs rising steadily, carriers see higher baseline rates going into 2015 as essential to maintaining adequate service levels over time. "In most route segments they are operating at or near full capacity with little room for error in managing assets," said TSA executive administrator Brian Conrad. "So this increase is needed as a cushion to cover costs and assure service choice and reliability."

◆ **Transportation and logistics deals see gains.** Merger and acquisition in the transportation and logistics sectors saw decent gains in the second quarter of 2014. In that period, PwC said that there were 51 transportation and logistics transactions valued at $50 million or more for a total of $20 billion—which was ahead of the 38 deals for a cumulative $16.2 billion recorded during the first quarter. Average deal value in the second quarter—at $393 million—was down compared to the first quarter average of $427 million and the second quarter 2013 average of $425 million. PwC said "mega deals," which it defines as deals valued at $1 billion or more, were low in the second quarter and served as a driver for lower overall deal value.

◆ **Education continues to pay in logistics and supply chain.** As we discover every year in *Logistics Management's Salary Survey*, education pays. Further evidence of this has just emerged in a new report by research giant Gartner on university undergraduate supply chain programs. Key among the findings is that the relevance these programs have to modern supply chain organizations has improved markedly through a combination of applied course work and more frequent work experience. Furthermore, a combination of program scope, internship, and co-op participation differentiates a school's position relative to other programs. The report also noted that supply chain undergraduate placement rates are between 85 percent to 100 percent. And in many cases, graduates are accepting higher starting salaries than finance and accounting majors. Gartner advises employers to work with a select set of university partners to build programs that start with internships and naturally develop into entry-level on-ramps to secure strong talent.

◆ **YRC narrows quarterly loss.** YRC Worldwide, whose regional and long-haul units provide the second-largest LTL capacity in the trucking industry, narrowed its second-quarter loss to $4.9 million on $1.32 billion in revenue, compared with a $15.1 million loss on $1.24 billion revenue in the same quarter a year ago. YRC has lost in excess of $2.6 billion in the last six years and is trying to get out from underneath debt service in excess of $1.2 billion. Its earnings before interest, debt, and amortization (EBITDA) were $63 million for the second quarter of 2014, as compared to adjusted EBITDA of $74.1 million for the second quarter of 2013. YRC Freight experienced a 5.6 percent increase in operating revenue, despite a half work day less as compared to the second quarter of 2013, according to YRC Worldwide CEO James

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LM management UPDATE

AN EXECUTIVE SUMMARY OF INDUSTRY NEWS

Welch. The additional revenue is due to increased volumes as well as a slight gain in revenue per hundredweight, he said.

◆ **Air cargo bumps up in June.** The International Air Transport Association (IATA) released data for global airfreight markets for June 2014 showing 2.3 percent growth in demand over June 2013. That is slower than the 4.9 percent growth reported for May. Nevertheless, overall growth for the first six months of 2014 stands at 4.1 percent compared to the same period in 2013—much stronger than the 1.4 percent increase reported for the full-year 2013 over 2012 levels. The strengthened growth has been underpinned by improving global trade and stronger business activity over the past year. "At the half-way point of the year, it's clear that overall cargo demand is much stronger than in 2013," said Tony Tyler, IATA's director general and CEO. "Carriers in Asia Pacific and the Middle East have been the biggest beneficiaries of the improved market conditions. Europe is doing reasonably well, albeit still in recovery mode. The weak spot is the Americas."

◆ **Time to "man up" on the high seas.** The current shortage of officer corps seafarers is forecast to worsen and risks impacting carrier profitability, according to Drewry's recently published *Manning 2014 Annual Report*. Owners and managers need seafarers, and they say they need experience, expertise, and quality. However, they do not have the resources to fund substantial rises in pay. In recent years, owners and managers have been heavily cost-focused, as weak freight rate earnings have yielded poor returns. Manning has become the natural target for cost cutting, being the single largest element in ship operating costs, with officer recruitment being directed towards the lowest cost source. Drewry estimates that the current officer supply to be 610,000, representing a shortfall of 19,000 personnel. This shortfall is forecast to rise to 21,700 by 2018 given that there will be a requirement for an additional 38,500 officers by this time.

◆ **Matson reports solid results.** Matson, Inc. reported another solid quarter benefitting from higher freight yields in transpacific trade lanes, improved lift volumes at their terminals, and continuing improvements in logistics. However, Matson's President and CEO Matt Cox said that these benefits were offset by lower Hawaii container volume, increased vessel operating expenses stemming from vessel relief activities, and increased terminal handling expenses. "Our operating platform continues to generate significant cash flow that positions us well to fund our fleet renewal program, undertake new growth opportunities, and grow our dividend incrementally," said Cox. "As we look to the balance of 2014, we expect overall results to exceed the results achieved in the second half of 2013." Matson's logistics arm expects the second operating income to be near or slightly higher than comparable 2013 levels.

◆ **Evergreen Boston bound.** As part of the new service linking North Asia and the U. S. East Coast, Evergreen Line's containership *Ital Lunare* made its first ever direct call into the Port of Boston for the ocean carrier in August as part of the CKYH partner agreement. The weekly service also calls at the U. S. ports of New York and Norfolk and travels through the Panama Canal making calls at the Asian ports of Qingdao, Shanghai, and Ningbo. The Evergreen Line ship has a 5,086 twenty-foot equivalent units capacity and was built in 2007. An Evergreen spokesperson noted that with distribution centers moving into New England, this weekly service will help accommodate growing needs for direct calls in the burgeoning New England market. Other members of the joint agreement providing the all-water service via the Panama Canal are Cosco, K Line, Hanjin, and Yang Ming.

◆ **Regan honored by CSCMP.** Mike Regan, chief of relationship development at TranzAct Technologies and a long time blogger on logisticsmgmt.com, is this year's recipient of the Council of Supply Chain Management Professionals (CSCMP) Distinguished Service Award and will be presented with the award at the CSCMP Annual Conference this month in San Antonio, Texas. CSCMP said that this award is bestowed on an individual for significant achievements in the logistics and supply chain management professions. "Mike is a champion of innovation and creativity, cares deeply about the people in our profession, and has the ability to share his knowledge in ways that positively affect our community," said Rick Blasgen, CSCMP's president and chief executive officer. □

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Logistics Management

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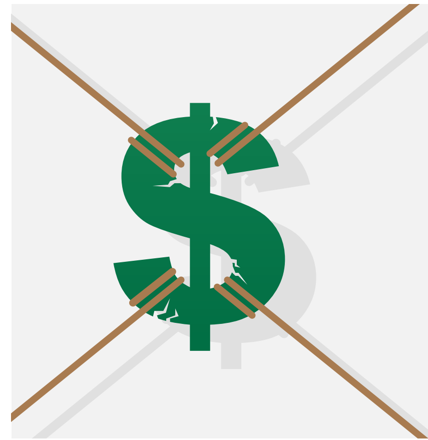

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23rd Annual Study of Logistics and Transportation Trends

Who's winning transportation's tug of war?

Thursday, September 25 @ 2:00 p.m. ET
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Results from our *23rd Annual Study of Logistics and Transportation Trends* suggest that carriers, driven by a need to maximize profitability, are at a polar opposite with shippers who are focused on reducing their costs.

How can carriers and shippers collaborate to put an end to transportation's tug of war?

Join Group Editorial Director **Michael Levans**, **Mary Collins Holcomb, Ph.D.** of the University of Tennessee, and **Karl B. Manrodt, Ph.D.** of Georgia Southern University, as they reveal all of the findings of our *23rd Annual Study of Logistics and Transportation Trends*. Shippers will learn:

- Critical steps carriers and shippers need to take to put an end to the struggle;
- The percentage of freight dollars currently spent by mode over the past 12 months; and
- What the next era of transportation management will look and act like.

SPECIAL REPORT

FREIGHT FORWARDERS

Leaders prepare for demand surge

With most economists forecasting robust growth in U.S. manufacturing, global freight intermediaries must be prepared for a spike in new business—and concurrent expectations for higher levels of performance. Page **55S**

SPECIAL REPORT

Information Management: In Search of Supply Chain Convergence

The supply chain software market is evolving toward platforms that optimize end-to-end processes and juggle constraints at all levels. Here's how several leading suppliers are making progress on this vision. Page **62S**

Transportation's tug of war

THE LEAVES ARE FALLING and footballs are flying, and that means it's time to share the findings of *Logistics Management's* (*LM*) *Annual Study of Logistics and Transportation Trends* (*Masters of Logistics*), the clearest picture available of transportation spending across the modes and the most comprehensive summary of how logistics professionals are managing their operations in current business conditions.

First, the *LM* staff would like to thank the 766 domestic and global logistics, transportation, and supply chain management professionals who took the time out of their schedules to participate this year. This is a fairly detailed questionnaire, so the fact that we had such a terrific response tells us that the results are well worth the effort in the eyes of our readers.

This marks the 23rd year that *LM* has partnered with Karl Manrodt, Ph.D. and Mary Holcomb, Ph.D. to capture the results. Through the pages of *LM*, online in our *Annual Masters of Logistics* webcast (September 25), and in a live session at CSCMP's annual conference, Holcomb and Manrodt's presentation of these results have helped countless logistics professionals re-engineer their operations. And of course, I'd be remiss if we didn't thank the group of University of Tennessee graduate students who have the job of crunching the numbers as well as our research partners at Con-way Inc. and CarrierDirect who have lent intellectual support in presenting the findings.

This year's results paint a dramatic picture of a struggle, a freight transportation tug of war as our research team so accurately defines it. Our results illustrate that shippers and carriers now have diametrically opposed business objectives.

At one end of the ponderous rope we find the carrier base looking to maximize profitability while their costs are rising in the midst of a maelstrom of operational challenges. At the other end, white-knuckled and holding on for dear life, are shippers trying to reduce their costs while managing increasing demand uncertainty from all customer levels.

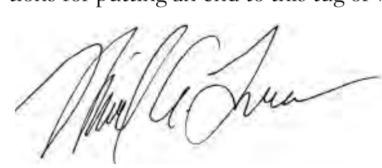
"In fact, many shippers are asking for cost *reductions* at the same time that they're asking for improvements in service," says Manrodt. "In the trucking marketplace, for example, where capacity is tight and carrier costs are increasing due to factors such as the HOS rule change and the impact of CSA, a struggle has ensued to find a collaborative point."

But how can two parties collaborate when their business goals are so disparate? "The two parties need to find common ground," says Holcomb. "Our analysis shows that shippers and carriers are aligned on two key points. They both believe that a core carrier relationship adds value to the shippers operation and also helps a carrier achieve their business goals."

But there's a rub, adds Holcomb. "Both feel that shippers rely heavily on price when choosing a core carrier—and we know it's difficult to be innovative and help achieve your customer's goals while being the lowest cost service provider."

Holcomb and Manrodt believe that closing this cost/service gap between shippers and carriers represents an opportunity to alter the current struggle. "Instead of pulling against each other, carriers and shippers must work on those areas that will result in lower operating costs for the carrier, while providing better service to end customers," says Holcomb.

Starting on page 24, our research team digs into the findings and offers suggestions for putting an end to this tug of war.



Michael A. Levans, Group Editorial Director
Comments? E-mail me at
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price**TRENDS**

Pricing across the transportation modes

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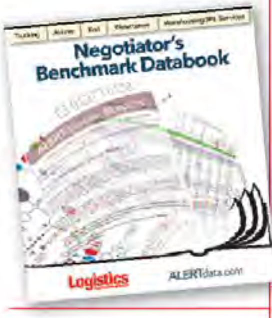

For timely and accurate insights on markups and costs in the transportation services market, there is no better resource than the **Negotiators' Benchmark Databook** from *Logistics Management* and ALERTdata.com. Updated with the latest statistics every month, there are five U.S. logistics market databooks available now:

- Truck Transportation
- Air Transportation
- Waterborne
- Rail Transportation
- 3PL/Warehousing Services

Each **Negotiators' Benchmark Databook** has helpful summary pages and also reports on detailed cost categories in labor, materials, fuel, and purchased services. Index data and spending (per $100 of sales) data provide insights into price/cost escalation and estimated mark-ups. With 10 years of monthly data, you'll see long-term trends as well as the most recent turning points in prices, costs, and margins.

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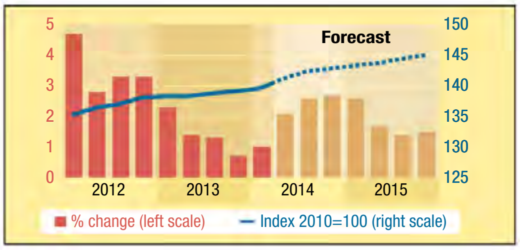
Logistics MANAGEMENT

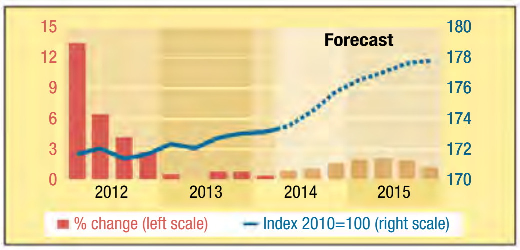
TRUCKING



% CHANGE VS.:	1 month ago	6 mos. ago	1 yr. ago
General freight - local	0.0	0.0	0.0
TL	0.1	2.6	2.8
LTL	0.9	4.5	6.4
Tanker & other specialized freight	0.2	0.6	1.1

LTL trucking prices accelerated 4.5% in the first seven months of 2014 compared to year-ago. At the same time, transaction prices were up 1.7% for TL general freight, up 1.7% for all special freight and flat for local freight trucking services. All told, inflation for the entire trucking industry clocked in at a 1.7% rate. Meanwhile, cost escalation has been keeping pace with prices thanks to upward pressure from driver wages. We estimate that trucking's direct labor costs grew 2.9% over the past 12 months. That compares to slower 0.9% labor cost hike in 2013. Looking ahead, LTL prices are expected to rise 4.6% this year and 3.3% next year. Likewise, TL tags are forecast to increase 2.3% and 1.8%.

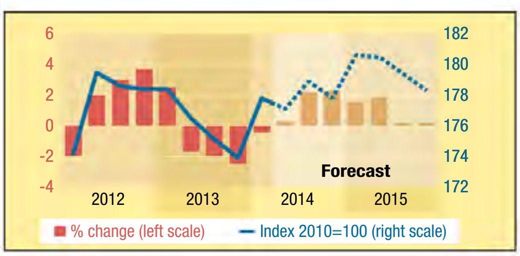
AIR



% CHANGE VS.:	1 month ago	6 mos. ago	1 yr. ago
Air freight on scheduled flights	-0.1	0.2	0.6
Air freight on chartered flights	0.3	-3.4	2.6
Domestic air courier	0.0	0.4	5.5
International air courier	0.2	0.8	6.3

In the first seven months of this year, average prices for airline services increased 2.4% from year-ago levels. Most of that price hike came from passengers' coach seats. For hauling cargo in the belly of planes on scheduled flights U.S. airliners managed to increase those prices by only 0.7%. Air cargo chartering companies, on the other hand, hiked their average price tags up 3.7% over the same period of time. After the air cargo price escalation rates running as high as 13.7% (March 2012) and 17.2% (December 2008), our price forecast these days appears positively stalled. We continue to predict air cargo tags will be up only 1% 2014 and 1.8% in 2015.

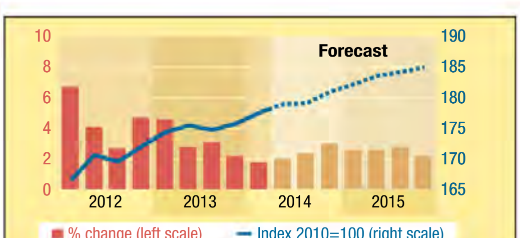
WATER



% CHANGE VS.:	1 month ago	6 mos. ago	1 yr. ago
Deep sea freight	-0.9	-0.1	5.7
Coastal & intercoastal freight	1.1	4.5	-4.1
Great Lakes - St. Lawrence Seaway	0.9	0.6	0.8
Inland water freight	2.6	-0.7	-6.2

Inland waterways freight transportation prices decelerated 6.6% in the first seven months of 2014 compared to year-ago. Over the same time period, transaction prices for transporting on the Great Lakes-St. Lawrence Seaway decreased 5.8%. However, for U.S.-owned ships operating in deep seas, prices actually increased 5.9%. By the time 2014 closes, we forecast the inflation headwinds ahead will cause inland waterways prices to decrease 5.3%, but at the same time will push deep-sea prices to increase 5.7%. Consolidating the ups and downs into a single industry price index leads to a 1.1% average price increase for 2014 and 1% for 2015.

RAIL



% CHANGE VS.:	1 month ago	6 mos. ago	1 yr. ago
Rail freight	0.1	1.2	2.5
Intermodal	0.1	0.6	2.5
Carload	0.1	1.4	2.7

Prices for carload rail transportation service increased 2% in the first seven months of 2014 compared to year-ago. Over the same period, prices for intermodal rail transportation accelerated at a slightly faster 2.2% pace. With carload rail exerting the strongest pull, the rail transportation industry overall reported a 2% price hike. Profit margins in the rail transportation industry do not appear in too much danger from a price/cost perspective. In the first half of the year, we estimate that rail industry hard costs (direct materials, fuel, labor, etc.) were up only 1%. The price outlook for rail service continues to show a 2.3% increase in 2014 and 2.6% in 2015.

Also:
- Could "dim pricing" be the financial savior for the LTL sector? Page 14
- International growth paces Q2 intermodal volumes, reports IANA, Page 16

UPS, FedEx receive more licenses for domestic express package services in China

Parcel giants get green light to extend intra-China services to Beijing and other Chinese cities, opening up routes inside the second largest global market.

By **Jeff Berman,** Group News Editor

FRAMINGHAM, Mass.—In recent years, transportation and logistics titans UPS and FedEx have only been able to provide domestic delivery service in China on a limited basis. But a recent *Reuters* report says that's changing, noting that both companies have now obtained licenses from the Chinese government to extend domestic express package services to Beijing and other Chinese cities and no longer have to rely on joint venture partners to deliver packages within China.

The report added that each license "permits the holder to operate B2C [business-to-consumer] domestic express package services within a single city and between cities for which a license is also held." With these licenses, UPS and FedEx have increased access to the second largest global market behind the U.S. And due largely to e-commerce, the Chinese market is seeing a 60 percent annual growth rate in 2014 and could be worth up to $46 billion in 2015, based on data from Deloitte.

The reason neither UPS nor FedEx has been able to set up shop in China for domestic delivery services is that, as per Chinese law, non-Chinese air providers are only permitted to fly in and out of China, but not from point-to-point within China. So, in order for FedEx or UPS to send an overnight package from Beijing to Shanghai, they have to fly the package on an aircraft that is not theirs.

In October 2009, a new Chinese postal law took effect, which created a new permitting system for the express sector through the China State Postal Bureau (SPB). This law excluded non-Chinese from competing in the domestic document and letter delivery market.

The China postal law gives China Post a monopoly on letters and documents, with private carriers allowed to deliver inbound and outbound documents, but not intra-China. In addition, foreign airlines can't operate within the country.

With these new licenses, UPS now has 33 licenses in China, with 14 of them approved by the Chinese government in May, according to *Reuters*. FedEx received 21 licenses in May and now again has 58 licenses—the number it had prior to the 2009 China postal law's passing.

In September 2012, the Chinese government granted both companies the green light to provide intra-China express package services and essentially re-apply for licenses. FedEx was granted rights to serve eight cities in China: Shanghai; Guangzhou; Shenzhen; Hangzhou; Tianjin; Dalian; Zhengzhou; and Chengdu.

FedEx entered the China market in 1984 and provides international and domestic service for shippers doing business in China. FedEx officials told *Logistics Management* that it operates as a wholly-owned enterprise in China and has direct custodial control of operations, allowing for flexibility and improved speed-to-market.

FedEx operates more than 225 weekly international flights in and out of China. The parcel carrier has been operating a domestic delivery business in China since receiving an investment certificate from the Ministry of Commerce in December 2006 and a business license for domestic services from the State Administration of Industry and Commerce received at the same time.

UPS has offered domestic services to shippers on a contract basis since 2005. In 2008, it opened a major hub in Shanghai in the Shanghai Pudong International Airport. In July 2011, the carrier began operating flights into Chengdu as part of an effort to expand its connections between Asia, Europe, and the U.S. The Chengdu flights connect Europe and Asia with a total of 24 weekly flights. UPS currently serves 330 cities in China and operates 200 weekly flights connecting China to markets around the world.

Prior to these licenses being granted in recent years, UPS and FedEx were very limited as to what they could do for movements within China, according to Jerry Hempstead, president of Hempstead Consulting, a parcel express consultancy.

"The Chinese government wanted Chinese transport companies to grow and be able to support the logistics needs of the Chinese and not rely on foreign firms," said Hempstead. "As a result, certain impediments were put on the foreign firms to give an advantage to their own. These restrictions have now been lifted and FedEx and UPS can take off running. Both firms already have tremendous investments there in hubs, terminals, trucks, and people." □

TRANSPORTATION RATES

Could "dim pricing" be the financial savior for the LTL sector?

FRAMINGHAM, Mass.—Anybody who thinks that there's nothing new happening in the $35 billion less-than-truckload (LTL) sector isn't paying attention to undercurrents in the once-staid, regulatory-bound industry.

LTL carriers are rapidly investing in on-dock, three-dimensional size measurement capturing machinery with the goal of more accurately charging shippers rates based on the actual dimensions of their shipments—rather than the traditional weight-and-distance-based formula that's been in effect since the 1930s.

The "dim" machines are already being tested by industry giants FedEx Freight, YRC Worldwide, Old Dominion, Saia, and probably many other carriers in the LTL space.

Joel Clum, president of Carrier Direct, a trucking consulting firm, says dimensional pricing could soon "revolutionize" the LTL sector. He says that the current weight-based and freight classification system is outdated and should be replaced by the dimensional weight approach that is easier to understand and easier to automate.

Others agree, to a point. Satish Jindel, president of LTL analyst firm SJ Consulting, said that dim pricing could aid carriers' profitability, but might be difficult to implement due to the variety of shipments that move every day in LTL carriage.

However, the LTL sector might be ripe for change simply because of its composition. Unlike the highly fragmented truckload sector where the largest carrier barely has 1 percent market share, the LTL sector has greater consolidation. In fact, the top six LTL carriers carry more than half of the freight.

The problem, as always with all of trucking, is capacity. Lightweight, bulky LTL shipments tend to "cube out" before they "weigh out" in a traditional 53-foot trailer that is allowed to carry 80,000 pounds.

However, right now, there's little penalty for shippers and manufacturers who clumsily package shipments in air-filled boxes that take up excess room in trailers. Twenty pounds of toilet paper costs roughly the same to ship whether it's in a 10-foot by 10-foot by 10-foot box or it's in a box that's 25-foot by 25-foot by 25-foot.

That could all change if dim pricing methodologies are instituted by the LTL industry. Any carrier who encountered, for example, two 10,000-pound shipments of lower classified freight that filled an entire 28-foot or even a 53-foot trailer has long coveted a method to raise the revenue for that shipment—or any other shipment that weighed less than 15 pounds per cubic foot.

Also, experts say, this pricing revolution could be implemented only if virtually the entire $35 billion LTL sector moves in lockstep to institute it. Because of antitrust laws and other competitive factors, that could be difficult—and might ultimately lead to lawsuits by reluctant shippers.

Chuck Clowdis, the veteran trucking research analyst, said that truckers have discussed dimensional LTL pricing for the past 10 years, and maybe longer. "I recall nearly three decades ago buying tape measures and training a sales force on how to attempt a rudimentary estimation of cube and the impact on trailer space utilized," Clowdis recalled.

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"Carriers attempted some pricing regulations that raised the rates for any single shipment taking an entire trailer, but the problem persisted."

The problem is that carriers allowed the ubiquitous "freight all kinds" (FAK) rating concession surge to rob them of one remedy—the true classification of Class 100+ freight. About a decade ago, trucking consultant Hank Mullen pushed the dim pricing idea, but couldn't move it forward.

However, now that "laser-driven dimensioners" have been made affordable to LTL carriers, the dim pricing idea has gained new traction.

"We need to simplify this process," says FedEx Freight CEO Bill Logue. "It's not going to happen overnight. Different customers will have different needs. It will be a long-term, dual type environment, and it will take a long time."

Shippers, no doubt, will have a major say in this gravitation away from the traditional class-rating system. Certainly, the carriers will be able to charge compensatory rates on lower classified, lightweight shipments. However, the shipper will need to see value in this change, or else he or she will gravitate to one of the LTL carrier holdouts that can be counted on to buck the new system, say analysts.

Already, UPS and FedEx are planning widespread use of dim pricing in their small package units, starting early next year. But whether that system can be expanded to the more staid LTL industry is an open question that even industry leaders can't answer.

—John D. Schulz, Contributing Editor

INTERMODAL

International growth paces Q2 intermodal volumes, reports IANA

CALVERTON, Md.—Intermodal volumes in the second quarter improved with the weather, according to the *Intermodal Market Trends & Statistics Report* released by the Intermodal Association of North America (IANA).

Total intermodal volume movements were up 8.2 percent compared to the second quarter of 2013. IANA said this strong output stands as the highest quarterly intermodal growth rate since early 2011. And through the first two quarters of 2014, total intermodal volumes were up 5.5 percent compared to the midpoint of 2013, matching up with the 5.8 percent annual gain recorded during the second half of 2013.

Unlike many recent quarters, which have seen domestic containers pacing

intermodal growth, international containers led the way in the second quarter, up 9.6 percent. In the report, IANA observed that an improving economy is partially responsible for the strong international performance as well as solid volumes at the Port of Los Angeles and the Port of Long Beach—where imports were cumulatively up 9.8 percent annually in the second quarter.

The report added that it's possible that shippers have accelerated imports given potential West Coast labor issues, which could lessen international volumes in the third quarter.

IANA President and CEO Joni Casey told *Logistics Management* that, in the first quarter, the winter weather held down volumes, making second quarter volumes appear higher than expected on the heels of a stronger overall U.S. economy.

In the report, IANA said that the growth rate for domestic intermodal appears to be slowing, as railroads grabbed a bigger share from the highway while trailer to container conversion stalled. It also pointed out that the domestic container growth rate pales compared to a little more than a year ago, when its growth rate was in the double digits.

"There does seem to be a consistent conversion of highway to intermodal, and with the capacity in over-the-road loads still challenged by driver shortages, this trend is expected to continue," said Casey.

"Things are strong in intermodal, not only because of things moving early due to the West Coast labor talks, but because the segment is seeing underlying strength," said FTR Senior Consultant Larry Gross.

"The big story this year is service, or a lack of service," said Gross. "Almost everywhere shippers turn, they're facing capacity difficulties, cost issues, and service problems. If you look at what is going on at ports right now, it's just insane how bad it is, as things to a large degree are significantly impaired."

Gross added that this is not a problem with an easy "fix" due to chassis-shortage issues as well as the impact of bigger ships on terminal operations. "Shippers may be considering moving more freight back to highways, but intermodal in a sense has propped up the volume, because highway capacity remains so tight. And because speeds are slower, the domestic container fleet has gotten less productive, which represents a constraint on capacity," said Gross.

—*Jeff Berman, Group News Editor*

Newsroom Notes
with Jeff Berman

Jeff Berman is Group News Editor for the Supply Chain Group publications. If you want to contact Jeff with a news tip or idea, please send an e-mail to jberman@peerlessmedia.com.

Fourth and long for federal surface transportation funding

WITH THE NFL SEASON IN FULL SWING, it stands to reason that Congress must be replete with football fans, given how it has elected to punt on federal transportation funding yet again as the Senate signed off on a 10-month bill to keep federal surface transportation funding intact through May 2015 with a $11 billion stopgap measure.

When it comes to this situation, there are a few constants:

• The federal gasoline tax, which serves the main funding mechanism for the Highway Trust Fund (HTF), has not been increased since 1993.

• There has not been a long-term federal surface transportation bill since SAFETEA-LU expired in September 2009.

• The HTF continues to pay out more than it receives.

• Congress continues to predictably let down its constituents with its petulant "draw a line in the sand" stances on how to make the situation better.

So, where does all that leave us? Back to where it started.

The good thing is that federal surface transportation funding remains intact for the next 10 months. The bad thing, of course, is that all the same challenges pertaining to how to adequately fund surface transportation projects and move forward on a long-term bill remain where they have been for sometime—in a fourth and long situation, with no hope for a first down.

The bill signed off on by Congress, the Highway Transportation and Funding Act of 2014, has language pointing out what's been apparent for a while: The existing HTF system is unsustainable and unable to meet our nation's 21st century transportation needs. It also notes that Congress should enact and the President should sign a surface transportation reauthorization.

This is all good and well, but the fact remains that the federal gasoline tax has not been increased since 1993. That's a long time, and at the end of the day it's unacceptable. The notion of raising the tax and indexing it to inflation, which has been proposed by various non-Congressional stakeholders, is apparently too reckless and a non-starter. Really?

Instead, the bill turns to other potential revenue sources, including extending pension smoothing relief that was enacted in 2012 as part of the MAP-21 legislation and would allow employers to continue to use historic interest rate averages to calculate their pension contributions; transferring $1 billion from the Leaking Underground Storage Fund into the HTF; and requiring the Secretary of Transportation to charge and collect a fee of .3464 percent *ad valoreum* on merchandise formally entered or released into the U.S, raising an estimated $3.5 billion.

Are these measures really going to save the day? It looks like we'll have to wait and see. The Senate wanted a shorter bill through December, with the hope that it could then begin work on a multi-year bill. The House balked on that, preferring the 10-month bill to secure funding into 2015.

"This latest round of political tension comes at a time when the Department of Transportation has said that, beginning on August 1, it would have had to start cutting payments to state and local governments for road and transit projects by as much as 28 percent if Congress did not take quick action.

This was essentially premeditated on both sides, as *The Hill* reported prior to the Senate vote that House Speaker John Boehner (R-Ohio) said that he "wouldn't accept the Senate's changes, and would simply strip them out and send another bill back to the Senate."

This latest round of political tension comes at a time when the Department of Transportation has said that, beginning on August 1, it would have had to start cutting payments to state and local governments for road and transit projects by as much as 28 percent if Congress did not take quick action, *The Hill* report added.

This whole thing brings to mind the saying: "It would be funny if it weren't so sad." As Congress waits for the White House to formally sign this bill, fights are being fought, and turf is being protected in Washington. Meanwhile, the game continues to remain deadlocked, and it always seems to be fourth and long. □


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Moore on **Pricing**

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.

Big Data and 3PLs

As third party logistics providers (3PLs) work to ramp up services for their customers, one area of focus is information management services.

As one can imagine, the 3PL is in a unique position to collect and scrub large volumes of transaction information as they execute orders for shippers. Until recently, large portions of the 3PL data was often *not* passed on to the shipper nor leveraged for improvement initiatives, being viewed as more of a feeder on basic transaction facts to the customer's own ERP. Historically the shipper's ERP systems did the heavy lifting in managing data, but many data elements were discarded to keep the expense and effort involved to a minimum.

With the improvements in systems available to 3PLs, coupled with their drive to add more value to shippers, they've been investing in people, processes, and technologies that can help customers manage the cost and service levers of logistics. Today, shippers shopping for a 3PL need to ask about their capabilities in managing and leveraging "Big Data."

"For shippers in the 3PL market, there's a whole new dimension to service that now has to be considered. In order to enable cost and service improvements, shippers will need to utilize the detailed information and analysis of the Big Data generated by the logistics functions.

Big Data in logistics includes the very detailed information that spring from the order to cash cycle. In fact, for many companies, their supply chain generates the majority of the data they have to manage. That makes the 3PL a key resource.

The volume of transactions multiplied by the order, inventory, dimension, freight, tracking, delivery and payment data balloons the data to be managed by logistics systems.

Today, we realize the value in mining transactional data and are increasingly relying on the service providers to provide clean, complete data sets for transportation, warehousing, and customs compliance. The leading 3PLs have even started to bring additional value by employing an analyst that can use data to show patterns that indicate opportunities for the customer to improve cost and service.

By way of illustration, when I had a 3PL business one of our services was rail fleet management. While many of our competitors offered aggregation of rail tracking data to customers on a daily basis, we realized that we could offer much more by manipulating the raw data we collected and providing valuable information to clients that would impact their operations.

For some customers we provided statistical projections regarding transit times, due dates, and car availability that enabled customers to reduce their fleets by ten percent. In turn, we were able to have an impact on the customer's business well beyond the transportation function as information replaced inventory of very expensive assets.

In one case, a lube oil company began planning their production cycles based upon our reliable information on empty cars, while their customers allowed the shipper to schedule the replenishment of stocks—thus enabling further production schedule optimization.

Our 3PL company benefitted, as we were able to increase fees 20 percent above the average for fleet management services with no additional labor. However, we did train our people to be data analysts, and this investment in our people resulted in a 1,200 percent ROI split between our customers our company.

For shippers in the 3PL market, there's a whole new dimension to service that now has to be considered. In order to enable cost and service improvements, shippers will need to utilize the detailed information and analysis of the Big Data generated by the logistics functions.

Often the company IT function has difficulty understanding and delivering the level of data detail and systems; however, a 3PL partner with the right tools and skills can fill this need. Be ready to ask some questions about how your 3PL will add value by analyzing this valuable information. □

Pearson on **Excellence**

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

Supply chain risk management: Keys to high ROI

In a very real sense, supply chain management is about managing risk: anticipating, avoiding, and minimizing supply chain upheavals caused by weather events, political havoc, technology problems, economic turmoil, market changes, currency swings, supply shortages and labor strife, to name but a few.

Unfortunately, these challenges are becoming more common. In fact, various indices show that volatility—the result of tumultuous political, environmental, technological, and financial events—is double that of any point in the past 30 years.

But how adept are companies at supply chain risk management? Do their risk-minimization initiatives pay them back, in part or in full? Is there one specific approach that enjoys a higher than average chance of success? In net, how relevant—and rewarding—is supply chain risk management?

To find out, Accenture surveyed more than 1,000 senior executives, more than half of whom hold C-level titles such as chief supply chain officer, chief procurement officer, and chief operating officer. Roughly 50 percent of respondents' companies have annual revenue of $5 billion or more.

Respondents told us that information technology and global economic turmoil are the most common and impactful drivers of supply chain risk. And they cited quality management, supply chain planning, and talent and skills optimization as the supply chain areas most vulnerable to risk.

Virtually every respondent reported that their supply chain risk management investments have generated a positive ROI. But perhaps most notably, the research revealed a small group of leaders that cited supply chain risk management ROIs in excess of 100 percent. Here are three behaviors associated with the leaders.

1. Make operations risk management a top priority. Sixty-one percent of the leaders (compared to 37 percent of others) consider supply chain risk management a strategic imperative. Armed with this perspective, leaders are likely to:

• Formalize risk management as a specific topic for discussion in management meetings.

• Install a risk management officer as part of the company's senior hierarchy.

• Establish and propagate a culture of risk management throughout the supply chain organization.

Develop and nurture supply chain risk management skills as part of employees' job descriptions.

• Deploy analytical tools that help the organization manage risk.

2. Centralize the risk management function. Centralized risk management, in our view, can be a significant advantage because it helps companies plan and react to risks in a coordinated and efficient manner. Compared to the survey population as a whole, leaders are far more likely to have a centralized risk management function that is led by a senior executive who oversees all risk management activities.

This doesn't mean that centralization is the only way to go, even though it speaks to the importance of establishing corporate-level guidelines for risk management and developing a consistent, enterprise-wide approach. Once a corporate risk management philosophy and methodology have been defined, a company could opt to design individual, more-local approaches that reflect the organization's unique supply chain structure and risk profile.

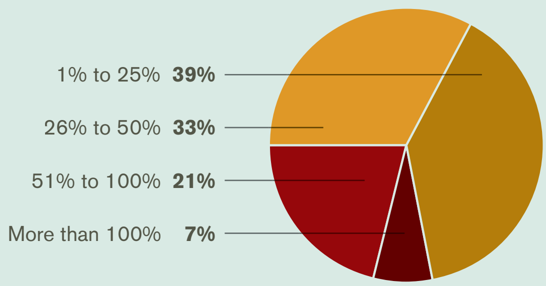
"Various indices show that volatility—the result of tumultuous political, environmental, technological, and financial events—is double that of any point in the past 30 years.

3. Make smart and significant risk-management investments. Leaders were nearly three times as likely as other respondents to cite plans for boosting supply chain risk management investment by 20 percent or more within two years. And it's pretty clear that some of the most important investments companies can make are those that enhance visibility.

Innovations like supply chain control towers and demand forecasting factories improve an organization's ability to collect and analyze data from across the supply chain, thus making it easier to see disruptions coming, plan more effectively, and respond more readily and appropriately.

These insights are consistent with findings from another Accenture research effort that revealed that

Responding companies reported widely varying returns on their risk management investments



Source: Accenture

companies perceived as leaders in managing volatility and risk often master these four capabilities:

- Capture data across the supply chain and develop actionable insights from it.
- Build adaptable structures to respond to changes.
- Develop innovative products and services with flexible approaches.
- Respond flexibly and quickly to last-minute changes.

Risk is a significant—even ubiquitous—concern, which is why most any company should consider a formal, individualized approach to risk identification, avoidance, minimization, and remediation.

At a minimum, that means defining an overall, corporate-level strategy and then determining the degree to which execution should be centralized or decentralized. Regardless of what approach is taken, visibility will be vital. Organizations can't see the future, but they can learn to view each of the supply chain's components and activities in something close to real time.

Factor in the ability to anticipate problems and prepare for the unexpected, and you have the rudiments of a high-ROI supply chain risk management program. ☐

23rd Annual Study of Logistics and Transportation Trends

Who's winning the

Results from our annual survey suggest that carriers, driven by a need to maximize profitability, are at a polar opposite with shippers who are focused on reducing costs. This lack of alignment has created a struggle that has resulted in a loss of focus on the bigger prize—being able to compete supply chain to supply chain.

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

The analogies between the game of "tug of war" and the current state of freight transportation management are almost boundless. Increasing transportation costs driven by a host of factors has now created a struggle between shippers and carriers as each side seeks to achieve their goals.

In fact, the results of the *23rd Annual Study of Trends and Issues in Transportation and Logistics* neatly define the tussle, where carriers are pulling hard to maximize their profitability while shippers are focused on reducing rising transportation costs.

Shippers are being pulled into higher rate territory as carriers deal with the impact of compliance, a driver shortage, and increased demand—all of which are driving up their costs. And to make the situation worse, constantly changing customer requests coupled with increasing demand uncertainty has created an environment where the only constant is uncertainty.

The Global Recession signaled changes to the operating parameters of the game that most of us didn't fully understand. It has given temporary advantages to carriers, much like the shippers had in earlier times. Yet, like tug of war, the game results in one winner and one loser.

Is this the game that carriers and shippers should be playing? Or, should they change the rules of the game and work together to solve problems that affect both of them, thereby allowing both to achieve their goals? What would happen if a team was composed of carriers and shippers working together to solve their mutual problems rather than competing?

The results of our *23rd Annual Study of Trends and Issues in Transportation and Logistics* suggest that the winner in the "new normal" business environment will be those companies that pull together in order to achieve their opposing objectives.

This involves two critical facets: establishing the gaps that exist between current and desired future practice and then mutually deciding upon the priority of actions to close them. In other words, carriers and shippers that master the gap will have to determine how they can leverage their knowledge and expertise to collaborate even when they have conflicting goals.

Understanding the current state

All the study respondents share a common view of the challenges presented by the current business environment. The cost to serve (distribution), inventory management, control, and labor costs as well as total landed costs are combining with the factors previously discussed to force changes in the way companies are managing transportation and logistics activities.

It's now clear that our new world consists of customers demanding shorter order fulfillment cycles, white glove service, and integrated omni-channel strategy to support their purchasing expectations. In order to support these customer requirements, service levels, and offerings must also increase.

While carriers have the capability to provide the desired services at the needed level, it often comes at a cost that many shippers have difficulty accommodating in the current environment of cost reduction. This

MASTERS OF LOGISTICS WEBCAST
Results of the 23rd Annual Study of Logistics and Transportation Trends

September 25, 2:00 p.m. EDT
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tug of war?

situation sets the stage for a tug of war between the two groups in that shippers need more in terms of service, but are unwilling—or unable—to obtain the transportation budget to support the additional cost that carriers say the increased levels of service and offerings produce.

In fact, many shippers are asking for cost reductions at the same time that they're asking for improvement in service. In a marketplace where capacity is tight and carrier costs are increasing due to factors such as the hours-of-service (HOS) rule change and the impact of CSA, a struggle has ensued to find a collaborative point.

The tug of war atmosphere is made more complicated by the fact that shippers and carriers have diametrically opposite business objectives. The study results show that the primary objective of carriers is profit maximization while the main goal for shippers is cost reduction.

How can two parties achieve success and collaborate under these circumstances? Perhaps the answer is in the two parties finding common ground. Our analysis of this year's results shows that shippers and carriers are aligned on two key points:

1. Strategic/core carriers add value to companies through the transportation services they provide.

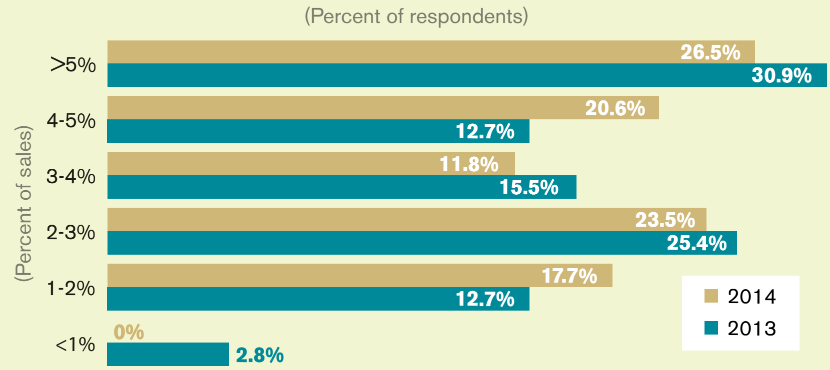
2. Strategic/core carriers help companies achieve their business goals and objectives through the transportation services they provide.

Unfortunately, there is one other element on which carriers and shippers had a moderately high level of agreement. Both agree that shippers rely heavily on price when choosing a strategic/core carrier. It's difficult to be innovative, strategic, and help achieve your customer's goals while being the lowest cost service provider.

This gap between shippers and carriers represents a zone of opportunity to change the current tug of war. Instead of pulling against each other, carriers and shippers must work on those areas that will result in lower operating costs for the carrier, while providing better service to end customers.

"This is where strategy really matters," notes Tommy Barnes, president of Con-way Multimodal, one of this year's survey analysts. "Companies have to share their strategic plan with the carriers so that they can better meet the needs of the customer. And on the flip side, carriers need to share their plans as well to make sure that there is alignment. Misalignment drives up costs and increases the potential for misunderstandings."

Domestic transportation spend as a percent of sales, 2014 versus 2013



Source: *23rd Annual Study of Logistics and Transportation Trends* (*Masters of Logistics*)

Transportation modal performance, 2014 versus 2013

	TL		LTL		Intermodal		Rail		Parcel	
Measure	**2013**	**2014**	**2013**	**2014**	**2013**	**2014**	**2013**	**2014**	**2013**	**2014**
Correct invoice (number of correct invoices / total invoices)	92.5	96.3	94.0	92.0	93.0	95.8	94.8	97.4	93.3	95.6
On time delivery (number of deliveries received on time/ total deliveries)	94.6	93.3	93.2	92.9	92.3	91.6	89.3	92.9	94.5	97.4
Damage (damaged shipments / total shipments)	2.4	0.3	2.6	1.6	3.5	1.1	4.2	0.5	1.8	1.2
Equipment availability (% of your requests that can be satisfied with available equipment at the time of your request)	92.9	87.6	96.5	94.5	92.6	90.1	95.3	95.2	97.3	99.1
Turndown ratio (total shipments declined / total shipments offered)	3.7	6.9	1.5	0.8	5.1	3.1	4.2	0.3	1.5	0.6

Source: *23rd Annual Study of Logistics and Transportation Trends* (*Masters of Logistics*)

Mind the gap: Differences that matter

To "mind" means to pay attention or concentrate on something. For shippers, the primary things that they mind are the cost of service and the resulting service they receive for those expenditures.

Data from the annual study show that some substantial shifts in spending have occurred since last year. There were no companies that reported transportation expenditures of less than 1 percent of sales. The results suggest that increasing transportation costs have moved this group to the 1 percent to 2 percent of sales category. Further, companies spending between 4 percent and 5 percent of sales on transportation showed a significant increase from the previous year.

While the year-over-year difference in the >5 percent group points towards a shift, further analysis shows that this difference is not statistically significant and this it is due to changes in the size of companies that participated in the study.

Realistic or not, many shippers expect that spending more money should result in better service—or at a minimum the maintenance of current service levels. The data show mixed performance outcomes. Improvements in service were reported relative to damage, with all modes showing substantial declines in damaged shipments. On-time delivery for truckload (TL) and intermodal declined, with TL reporting the largest drop in on-time delivery year-over-year with a 1.3 percentage point decline from 2013.

The data for two service elements—equipment availability and the turndown ratio—are particularly revealing. TL, LTL, and intermodal providers showed meaningful declines in equipment availability. In the case of TL, this service challenge was also reflected in the turndown ratio that increased substantially.

For the other modes, the turndown ratio declined, which may suggest that carriers are doing a better job of managing their available capacity. The law of supply and demand suggests that this situation will lead to increased cost as each unit of available capacity becomes more valuable in the marketplace.

Mine the gap: Finding "gold"

Results from this year's annual study further point out why the tug of war between shippers and carriers is not a winning game plan for either party.

It's clear that both parties agree that price is a major factor when choosing a strategic/core carrier. Further, they agree that many of the transportation services provided are highly standardized, which in turn makes standardization of the processes and procedures more straightforward. These factors point to a commoditization of transportation.

While at first glance commoditization of transportation services may seem like a viable avenue for shippers to reduce costs, it may be more costly in the long run as continuous improvement and differentiation of service are needed to compete. For carriers, commoditization will likely drive the relationship to a more transactional one with an emphasis on price.

However, the study results also reveal where opportunity gaps exist to stop the progression towards commoditization. The opportunities are found in the following statements that shippers widely agreed with:

- The process of moving to a new strategic/core carrier is not quick and easy.
- Strategic/core carriers are not the primary source of innovation in transportation services.

Our interpretation of the first point is that the relationship investment that a shipper makes to elevate a carrier to a strategic/core level is intended to be long-term. After being "promoted" to this level, carriers have the opportunity to leverage the partnership.

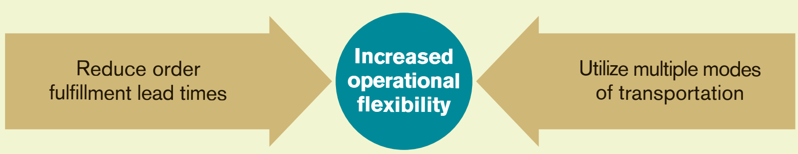
"This is where the long-term view is so critical," says Joel Clum, president of CarrierDirect, a research partner in this year's survey. "Too many times carriers and shippers have taken a transactional view of their business. But this focus will never lead to efficiencies and "wins" in the market. A long-term view gets both parties to think about sustainable solutions and building mechanisms to adapt to a changing environment."

The ability to leverage the partnership requires a deep understanding on the part of the carrier of what matters most to their strategic customer and then meeting or exceeding those requirements. The penalty for not doing this was also revealed in the study results: the shipper can, and will, switch significant volumes of freight to other strategic/core carriers.

The second opportunity area is one that has risen in importance as transportation costs have increased and the concept of value-add becomes more widely adopted. In the past, offering a quality service at a reasonable price maintained a carrier's competitiveness in the marketplace. Today, shippers seek transportation partners that can help them improve the efficiency and effectiveness of their organizations.

They require innovative processes that drive down costs and improve productivity. They expect value-added services that will lead to the creation of new business opportunities. The study results indicate that presently strategic/

Achieving maximum flexibility



Source: *23rd Annual Study of Logistics and Transportation Trends* (*Masters of Logistics*) core carriers are not delivering on this need. The message to carriers is simple: If you don't want to compete on price, you'll need innovative services and ideas to make your business stand out from the competition.

The last area for minding the gap between carriers and shippers involves a deeper understanding of where the two parties need to work together to succeed in the marketplace. Study participants noted that increasing cost to serve customers, changing customer requirements, and demand uncertainties are causing them to manage transportation and logistics differently than before. Indeed, these conditions make it essential for companies to be able to quickly respond to change as it occurs.

Companies have to be flexible in order to take action as necessary. The study findings indicate two important areas that companies are working on to improve operational flexibility that need innovative input from their strategic carriers—reducing order fulfillment lead times and utilizing multiple modes of transportation.

The study results show that an equal percentage of companies are in the planning and implementation stage of projects or initiatives to reduce order fulfillment lead times. Based on the overall theme of our findings, now is the time for strategic carriers to provide their input to develop processes and procedures that achieve the maximum flexibility possible.

The data indicate that 46 percent of the study participants have already incorporated the use of multiple modes of transportation to increase operational flexibility. For shippers that are in the planning and implementation stage (34 percent), carrier involvement is critical to ensure that transportation is leveraged to the extent possible to achieve both parties' objectives.

Power to master the gap

In a tug of war, only one side wins at the expense of the loser. Abraham Lincoln famously noted that "a house divided cannot stand." The internal warring, bickering, and contentions of a nation makes it weaker and vulnerable to external threats.

In the same way, supply chains are weakened when its members attempt to gain an advantage over the other, losing sight of the other competing supply chains on the field. While a shipper or carrier might win in the short term, they neglect to take into account the future consequences of these actions. Further, the current business environment makes the existing atmosphere between carriers and shippers untenable in the long term if both desire to succeed.

Perhaps the most compelling argument for reforming the current relationship between carriers and shippers are the answers to the following questions: Is what we're doing today actually working? Are we taking cost out of the supply chain? Are we increasing service levels to our customers? Do we really understand what factors drive our partners in the supply chain? Who will lead the way? Even if many of the answers are "yes," the fact of the matter is that tomorrow's innovative solutions require collaborative attention today.

Our customary theme for the annual study has been to focus on the Masters of Logistics, or those logistics operations inside companies with greater than $3 billion in annual sales. The way we define this group has been evolving over time from the largest revenue companies to those companies that establish the bar for leading-edge practice across a number of areas such as supply chain visibility, operational flexibility, and service excellence.

The results of this year's study confirm that the size of company does not make an organization a Master of Logistics. Rather, the findings suggest that the Masters will be those companies that use the power of "minding and mining the gap" between the current and desired state and then mastering how to deliver the best value in the form of service, cost, and innovation to the ultimate customer.

Perhaps mastering the gap is a team effort; or as Ray Kroc used to say: "None of us is as good as all of us."

Mary C. Holcomb, Ph.D., and Karl B. Manrodt, Ph.D., are frequent contributors to LM

Inside the 2014 numbers

This year, 766 domestic and global logistics, transportation, and supply chain professionals participated in our study that was done in cooperation with research partners Con-way Multimodal, CarrierDirect, and *Logistics Management* magazine. We'd also like to thank all of our participants for taking the time to offer their insight on trends and issues relevant to today's busy logistics professionals.

Participants accounted for an estimated $19.7 billion in domestic transportation expenditures and over $11.4 billion in international transportation. Large companies with annual revenue of more than $3 billion represented 17.3 percent of the study participants. Medium-sized firms, with between $500 million and $3 billion in annual revenue, were 29.4 percent of respondents. The majority of respondents (53.3 percent) were smaller firms with reported annual revenue less than $500 million.

Respondent companies represent a broad and diverse set of 15 industry sectors ranging from pharmaceuticals to food. Since the beginning of the study, the core group of participants has been in the manufacturing sector—this year they made up 32.8 percent of the total.

Consumer product companies represent the largest sub-sector of that group at 11.5 percent. Over the past several years we have strived to increase the participation of transportation providers in the study in order to more fully understand this perspective. This year, that sector comprised 22.6 percent of all participants, enabling us to do some comparative group analysis.

SINCE 1884 130th Anniversary

MOL VESSEL ON-TIME PERFORMANCE

APR. - JUN. 2014

ASIA-U.S. WEST COAST	98%
ASIA-U.S. EAST COAST	58%
TRANSATLANTIC	30%
ASIA-EUROPE	46%
ASIA-EAST COAST SOUTH AMERICA	72%
ASIA-MEXICO/WEST COAST SOUTH AMERICA	67%
INTRA ASIA	62%

TARGET: 100%

IN-TERMINAL TRUCK TURN TIME

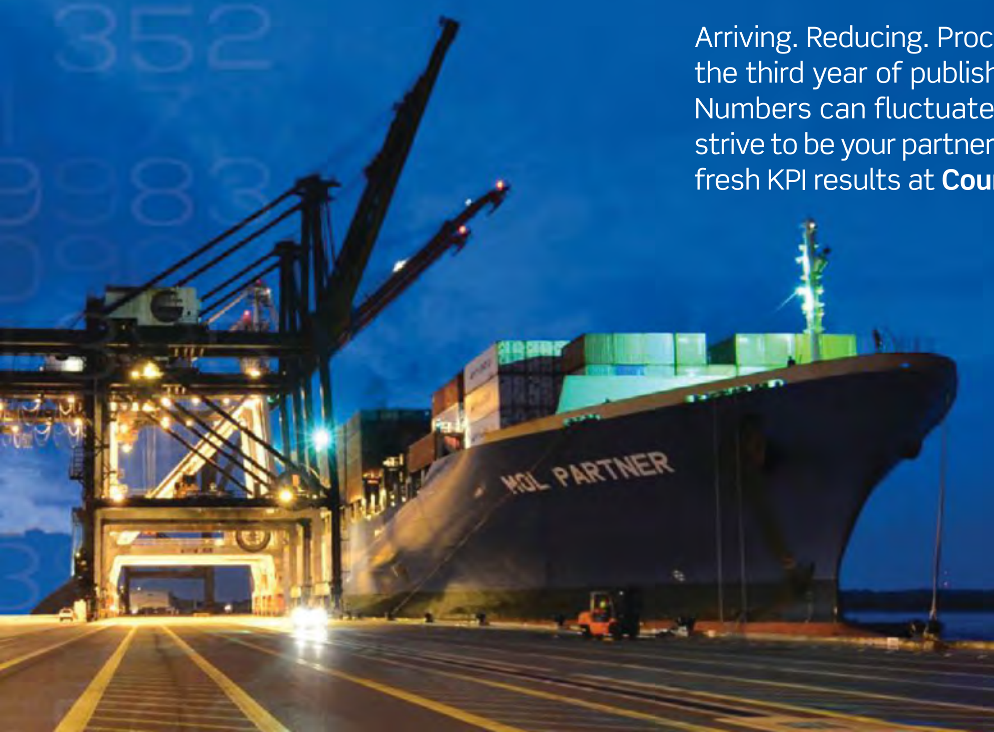
NORTH AMERICA JULY 2014

JACKSONVILLE	16.0 MIN.
LOS ANGELES	33.0 MIN.
OAKLAND	22.0 MIN.

TARGET: <30 MIN.

Operations performance you can count on.

Arriving. Reducing. Processing. Improving. MOL is now in the third year of publishing key performance indicators. Numbers can fluctuate for a variety of reasons but we strive to be your partner in performance. Review all of our fresh KPI results at **CountOnMOL.com**.



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3PL management: Building the dream

BY **BROOKS BENTZ** AND **BILL KAMMERER**, ACCENTURE

Once, in what seems to be a very long time ago, companies took responsibility for their own logistics, from inbound freight to outbound finished product. The concept of an integrated supply chain did not yet exist.

The move to an integrated supply chain and, later, to the formation of partnerships with third-party logistics (3PL) providers, was a gradual one, spearheaded by the rise of airfreight companies such as FedEx and UPS. Over time, companies began to see the importance of getting logistics right, especially as changes in manufacturing processes stressed "just-in-time" delivery and other techniques for freeing up working capital.

While this was happening, new theories of management stressed the concept of core competencies and focusing on the activities that were central to the company's success. In most cases, those activities did not include logistics. So, the reasoning went, companies should let outside suppliers solve their logistics concerns and concentrate on important things, like manufacturing and customer service.

That concept isn't working nearly so well anymore. Companies have delegated a vast and ever-growing range of responsibilities to 3PL providers, but in doing so they have lost a degree of control over what has become one of the most important capabilities in the digital age—the ability to get an item from one place to another in a way that meets customer expectations.

The "meets customer expectations" part is critical. In the far distant past, customers really didn't have expectations about logistics. If the product arrived on schedule and wasn't damaged in the process that was satisfactory.

Technology changed all that. With the rise of organizations such as Amazon.com, logistics became not just a core competency, but the core competency for many organizations. Expectations—for both retail and commercial customers—changed, as well. "Next week" became "tomorrow," and customers soon came to expect the ability to track the whereabouts of shipments—not just online, but through mobile applications. If the 3PL was unable to deliver on these expectations, customer satisfaction suffered.

Of course, there are other forces at work in addition too. Companies have become accustomed to operating in an environment marked by volatility and uncertainty. Global supply chains increasingly depend on transportation and logistics in order to be effective, so the impact of disruptive events is greater than ever. The end result, though, is the same: Logistics are more important than ever—far too important for a 3PL provider to handle without careful strategic and tactical direction from the company.

With the rapid adaptation of digital technologies, logistics is no longer a discrete element in a supply chain made up of clearly defined links. Rather, we see and are helping companies realize the evolution of what we call the "digital supply network," where talent, mobility, social media, analytics and Big Data, cloud computing, and physical locations converge to create digital supply networks that offer four distinct advantages:

Speed. Companies benefit from enhanced responsiveness and proactive prevention; they can spot irregularities and address them long before they become full-blown problems. Resources are managed on an automated basis, leaving skilled personnel available to deal with non-routine, "exception" situations.

Scalable. In a digital supply network, integration of various elements of the supply chain creates organizational flexibility and provides the basis for a personalized customer experience.

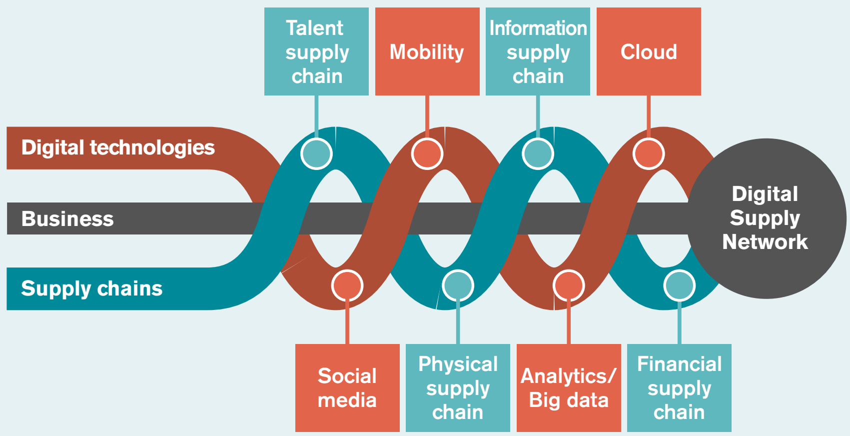
Intelligent. Analytics based on high-quality data provide actionable insights and a strong foundation for innovation. Execution is automated, with uniformly high standards.

Connected. Organizations have real-time visibility into

house

The continued evolution of “digital supply networks” depends on just how well shippers and their third-party logistics provider partners can work together to take costs out of the system while making improvements in flexibility and speed. Our consulting team offers a high-level blueprint for making it happen.

Convergence of supply chains



Source: Accenture, 2014

every stage of the supply process, from inward shipments to customer deliveries. Collaboration with other parts of the organization as well as with key outside suppliers is seamless.

In the digital supply network, 3PL providers are not going away. If anything, their role becomes even more vital, as companies seek to take advantage of their unique assets, such as far-flung DCs and state of the art materials handling systems, using them as a shared resource without investing their own capital. The key question is how to make the 3PL relationship work best for the organization, taking costs out of the system, while making improvements in flexibility and speed.

Building the dream house

In our view, the big problem in the relationship between companies and their 3PL providers is conceptual, not operational. Too many companies say, in effect, we have a problem; here is some money; make the problem go away. It's a bit like handing a large check to a contractor and saying, I need a house; here is some money; let me know when the house is finished. Odds are that the homeowner will not be happy with the final results and neither will the company that behaves similarly when they contract with a 3PL provider.

Several forces are converging to highlight the importance of the relationship between companies and 3PL providers.

First, as noted, the buying public wants and expects high performance. Second, there is ongoing pressure on costs. Shareholders and management look for downward, rather than upward, cost trends. Third, the demarcation line between physical and digital assets is blurring. With machines and physical objects communicating with each other, organizations can act more quickly and more intelligently. Those that fail to adapt will lose competitive ground.

Some companies have moved from a 3PL to a so-called 4PL solution, which means managing a suite of 3PL service providers. In a 4PL environment, an outside provider takes end-to-end responsibility, not just for traditional logistics functions such as pick, pack, and dispatch and freight billing, but also for non-traditional activities such as online ordering—often through a proprietary website. They may even market the company's products.

While the 4PL concept might make sense in some circumstances, finding a truly "agnostic" 4PL provider—one with no attachments to, or ownership of, transportation or other fixed assets—is difficult, and determining where the company's responsibilities end and the 4PL provider's begin is not always easy.

One of the best approaches: Examine the existing supply chain to identify areas of underperformance as well as areas with high potential for improvement. With priorities identified, the next step is to make sure that lines of responsibility are in place to make the right decisions and act on them quickly.

In many cases, companies can gain the benefits associated with 3PL or even 4PL providers while establishing stronger control over every aspect of the supply network. One way to do this is by moving to a "control tower" model, bringing together the capabilities required to manage complex, end-to-end supply chain processes.

At their most basic level, control towers are integrated transactional systems, delivering real-time visibility as to what materials are where in relation to established schedules. Dashboards monitor progress and monitoring systems generate alarms to trigger rapid action when problems arise.

At the next level, control towers incorporate advanced analytics to determine the root cause of supply chain issues. They run simulations and "what if" scenarios to gauge the impact of potential disruptions as well as the feasibility of different approaches—they also analyze risks and the effectiveness of various responses to such risks.

At the highest level, the control tower delivers insights to improve decision-making and makes strategy easier to execute. This means more than having the company do a better job in meeting key performance indicators; it means KPIs are redefined to reflect new capabilities and greater growth potential.

Control towers may require capital expenditures, but the true charm of the model is its flexibility: From an in-sourced, conventional execution model to an out-sourced, cloud-based, variable cost model, the options are innumerable to get to the right solution.

The transformation from a traditional supply chain to a digital supply network—one that incorporates trusted 3PL and 4PL providers as part of a seamless, collaborative enterprise—is not a simple undertaking.

Companies need a high-level roadmap to get from their current state to a highly functional digital supply network. There can be little doubt, however, that supply chain and logistics will become ever more central to corporate strategies, so now is the time to plan—and to act—on building that dream house.

Brooks Bentz and Bill Kammerer are managing directors for Accenture Strategy, Operations, and are frequent contributors to LM

Mobile Supply Chain: Significant progress, but a long way to go

Our top technology analysts give us an in-depth look at the current penetration of wireless and mobility outside of the four walls and offer their outlook on the future of real-time, 24/7 supply chain monitoring.

BY **BRIDGET MCCREA**, CONTRIBUTING EDITOR

As mobile devices and wireless functionality continue to penetrate our everyday lives, the same technologies are having considerable impact on the supply chain. Looking specifically at the area that stretches from the dock door to the end delivery point, for example, it's clear to see that mobile and wireless technologies are helping shippers work smarter, better, and faster in today's competitive business environment.

Driven by trends like omni-channel retailing, an increasing demand for real-time supply chain visibility, and the technological advancements themselves, the fully mobile supply chain is certainly coming into view.

"We're seeing substantial progress and significant investments being made in this area," says David Krebs, president of enterprise mobility and connected devices at VDC Research. And while the concept of using mobility in the environment *outside* of the warehouse and distribution center (DC) isn't new, Krebs says it's becoming more accessible to a wider range of shippers.

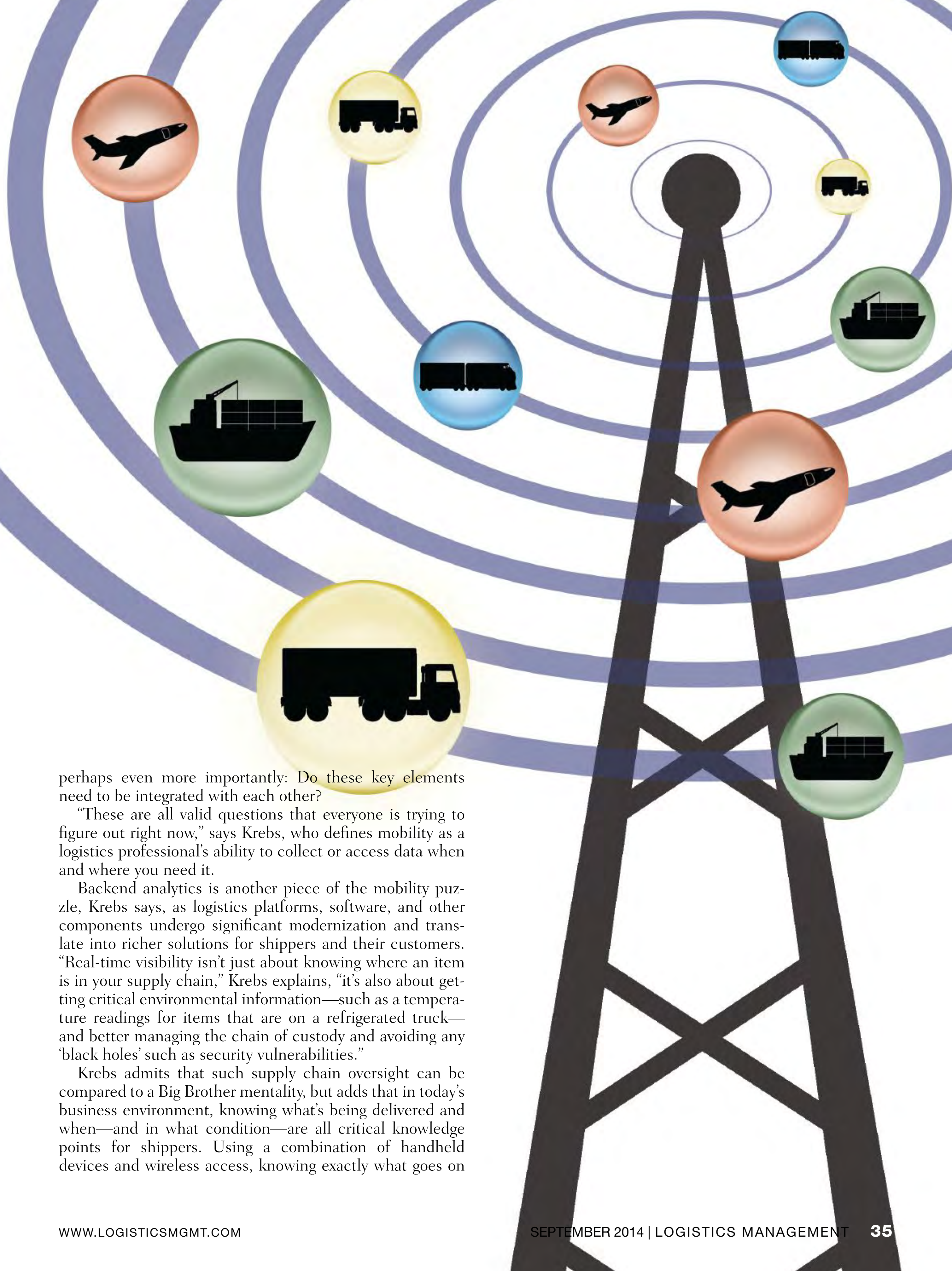
"Everyone from large couriers like UPS to smaller, specialty logistics organizations have been investing in mobile devices for proof of delivery, dispatch, and payments for some time now," he adds. "Now, we're seeing a lot more interest from a wide range of companies that want to develop massive networks that allow them to sense more activity at multiple nodes within the supply chain."

Over the next few pages, we'll round up the latest data and insights into the current state of wireless and mobility in the supply chain, with an emphasis on what's taking place outside the four walls of the nation's DCs. Our three leading analysts in this space offer their take on the top technology trends and explain just how close we are to mobile-enabled, real-time visibility—that long sought-after Nirvana of supply chain management.

Coming into sight

With the real-time supply chain within striking distance, Krebs has picked up on an ongoing debate over what type of device, level of ruggedization, operating system, and data collection capabilities will best suit shippers' needs.

Is it, for instance, enough to equip drivers with smartphones and related tracking/routing applications, or is it wiser to include ruggedized devices whose software is tightly integrated with the shipper's home base? And,



perhaps even more importantly: Do these key elements need to be integrated with each other?

"These are all valid questions that everyone is trying to figure out right now," says Krebs, who defines mobility as a logistics professional's ability to collect or access data when and where you need it.

Backend analytics is another piece of the mobility puzzle, Krebs says, as logistics platforms, software, and other components undergo significant modernization and translate into richer solutions for shippers and their customers. "Real-time visibility isn't just about knowing where an item is in your supply chain," Krebs explains, "it's also about getting critical environmental information—such as a temperature readings for items that are on a refrigerated truck—and better managing the chain of custody and avoiding any 'black holes' such as security vulnerabilities."

Krebs admits that such supply chain oversight can be compared to a Big Brother mentality, but adds that in today's business environment, knowing what's being delivered and when—and in what condition—are all critical knowledge points for shippers. Using a combination of handheld devices and wireless access, knowing exactly what goes on while products are on the road, on the rails, in the air, or even on the high seas, becomes that much easier.

In terms of the devices themselves, Krebs is seeing shippers use everything from ruggedized handheld devices equipped with top-of-the-line data collection capabilities to smartphone-like devices loaded with applications—and everything in between—to improve supply chain visibility. "Even consumer smartphones, with their integrated camera technology and increasingly powerful platforms are influencing the expectations of what and how a mobile device should operate," he adds.

Bring your own devices, please

Getting mobile devices into the hands of a logistics operation's on-the-road workforce is much easier than it was, say, 10 years ago. There's a good chance that even a small company working on a tight budget already has a team of workers who have purchased one or more smartphones or tablets for personal use.

Knowing this, many employers are instituting more BYOD, "bring your own device" programs, that find drivers and other workers using their own phones and tablets to help connect the dots across the supply chain.

"BYOD is certainly something that comes up in conversation, especially with some of the smaller or mid-sized organizations that are interested in taking the approach with their delivery staffs," says Krebs. "We're seeing some experimentation to that effect, as it presents a potential option for some organizations."

Telematics are also gaining ground and presenting potential for shippers. Defined as the convergence of telecommunications and information processing, telematics have gotten more affordable and are putting more real-time information into shippers' hands across the supply chain. Clint Reiser, research analyst with ARC Advisory Group, has seen more vendors offering telematics solutions that are more affordable and not as fast as their full-blown cousins that communicate five times to 10 times a second.

"The system may communicate once every couple of minutes, instead of at the high-frequency level," says Reiser. "These [scaled down] telematics options are less expensive because they can be added as applications to smartphones, which already have built-in GPS." As a core function, these solutions connect smartphones with onboard computers. And while the cheaper versions may lack the functionality required to track long-haul shipments, they can help add a new level of visibility for local transportation networks.

Hurdling the remaining barriers

In assessing the barriers that remain before all shippers have access to complete, mobile-enabled visibility across the supply chain, Krebs says that budgetary issues can keep companies from taking the leap.

The hardware and applications are just one cost component, Krebs notes, with workforce training as well as creating the underlying infrastructure necessary for integrating the system with current solutions also coming into play. And while mobility is usually a "Top 5" IT initiative for logistics operations, Krebs says that the budgets dedicated toward the cause don't always reflect that supposed priority level.

In terms of the integration challenge, Krebs points to the cloud as one way to make back-end, service-based platforms more available and collaborative across a wider swatch of mobile users.

"The cloud is helping to bring down some of the barriers to achieving real-time supply chain management and logistics visibility," says Krebs, who expects a continued push for this supply chain Nirvana over the next 12 months. "It's really quite an exciting time in terms of what we're seeing happening in the mobile space as it relates to logistics applications."

Simon Ellis, practice director at IDC Manufacturing Insights, concurs, saying that new innovations in the space are being driven by a combination of user demands and vendor innovation. And while he sees the use of mobility in the supply chain as more of an "evolution versus a revolution," Ellis sees more and more companies attempting to capture field-based data

How much mobility do you really need?

Before shippers distribute RFPs or cut checks to cover the costs of mobile supply chain technology, Simon Ellis, practice director at IDC Manufacturing Insights, says that they should take a step back and figure out what they *really* need to be able to gain mobile-enabled, end-to-end visibility.

Ellis says shippers need to ask themselves: Do you know when your shipments are leaving the warehouse? Do you know how they're being shipped? (If you're using UPS or FedEx, for example, then you have access to build-in tracking through you provider.) Do you know when the shipments actually arrive at their destination? Are you alerted to any problems along the way?

Assuming the answer to all of these questions is "yes," Ellis says that the next question to ask yourself is: Do you really need any more visibility than that? In other words, would more "scans" be helpful, or would they actually be superfluous and create complications.

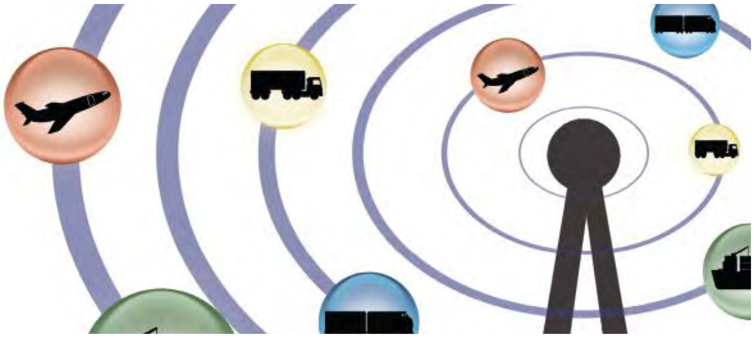
"Clearly you need visibility over your starting point, the warehouse, and the ending point, the delivery location, but do you actually need to know what goes on between those two locations?" asks Ellis. An ocean journey that takes 10 days, on average, can be planned around fairly easily—with or without minute-by-minute oversight via a mobile device.

"The point is, just because you *can* set up a real-time supply chain with 24/7 visibility of every shipment, doesn't mean that you should," says Ellis, who sees the 24/7 concept being important for many shippers, but not for all.

"It's a matter of figuring out whether you really need to know that a truck is going 55 miles per hour down highway 15, or if you can function just fine knowing that it's on track and one time. Then go from there," he says.

—Bridget McCrea, Contributing Editor


Are my customers shopping online with someone else?



"BYOD (bring your own device) is certainly something that comes up in conversation, especially with some of the smaller or mid-sized organizations that are interested in taking the approach with their delivery staffs. We're seeing some experimentation to that effect, as it presents a potential option for some organizations."

—David Krebs, president of enterprise mobility and connected devices, VDC Research

with the help of an automated device.

"In such cases, smartphones, tablets, and similar devices are increasingly the hardware of choice," says Ellis, who, like Krebs, points to the BYOD movement as another key point of progress for mobility in the supply chain.

"The whole idea of BYOD is interesting and something that in the long run is going to accelerate adoption," says Ellis. Also moving the adoption needle right now is a supply chain software community that is attempting to be proactive about integrating data collection and management capabilities into their solutions.

Retailers that have honed their freight movement processes to the point of complete efficiency, for example, are now trying to eke more savings through true, real-time, continuous visibility. According to Ellis, that's where the vendors come in.

"As omni-channel commerce becomes more and more prevalent, and as consumers intrude into the supply chain in ways they didn't five years ago, expectations around visibility and performance are not going to relax," says Ellis, "they're going to intensify." That, he concludes, will drive motivations both on the part of the shippers and the logistics software providers. "At the end of the day, the mechanics of achieving this goal will fall more to the latter," he says.

Bridget McCrea is a Contributing Editor of Logistics Management

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América Latina: Proceed with

Economic activity in Latin America and the Caribbean is expected to stay in low gear in 2014, according to the IMF's latest forecast for the region. Shippers are advised to practice extreme due diligence before entering the marketplace.

BY **PATRICK BURNSON,** EXECUTIVE EDITOR

A study by the Boston Consulting Group (BCG) shows that a series of global economic factors over the next few years will cause China to lose part of its cost advantage. The result, according to BCG, will be the relocation of many industries into Latin American economies that offer new incentives.

Many other leading trade analysts agree, but offer certain caveats. "Further investment in transport infrastructure—and better logistics performance in general—is certainly needed in the region," says Enrique García, president and CEO of CAF, the Development Bank of Latin America. "Latin America's supply chain and production structure is more fragile than that of countries comprising the Organization for Economic Cooperation and Development (OECD)."

He adds that the share of time-sensitive exports in Latin America, such as pharmaceuticals, is three times that of the OECD countries. This fact underlines the importance of improving logistics to strengthen overall economic performance.

The Latin American Economic Outlook, a study done by the OECD earlier this year, says that technological innovation and economic diversification will be key to boosting productivity and potential growth. Latin America's contribution to global gross domestic product (GDP) growth has remained virtually unchanged—between 7 percent and 9 percent—since the early 1990s, while that of emerging Asia markets has more than doubled in the same period.

Many Latin America economies remain heavily focused on natural resources. In fact, commodities make up 60 percent of the region's goods exports, up from 40 percent at the beginning to the last decade.

The OECD report encourages countries to use their natural wealth as a foundation for transitioning to production processes that use technology and knowledge. It also advocates that Latin American economies diversify exports, particularly toward the services sector, which offers greater opportunities over the medium- and long-term future. "Deepening the regional market would offer additional room for the services sector to grow and diversification to flourish," says Garcia.

However, transport infrastructure remains deficient, with an urgent need for investment in roads, railways, ports, and airports. Garcia suggests that investing 5.2 percent of regional GDP per year in infrastructure projects would help Latin America close the infrastructure gap with other emerging regions and could increase GDP growth by an estimated 2 percentage points per year.

"Much can also be done in the short term to improve the transport of goods and services using existing infrastructure," Garcia says. "This can be achieved with integrated logistics policies, modern storage facilities, efficient customs and certification procedures, as well as promoting competition in transport."

Brazil's play

As host of the World Cup this year, many soccer fans had high expectations for Brazil to win it all. But just as the nation failed to meet that goal, international logistics giants have also been disappointed in a different score. According to Soren Karas, vice president and head of group strategy for ocean giant A.P. Møller-Maersk,"significant transport bottlenecks" remain in Brazil and much of the rest of Latin America.

"However, Brazil is one of the most vocal countries about the need to overcome these problems to realize its export ambitions and drive continued social progress," says Karas. "To that end, the government is stepping up its investments in infrastructure and is inviting private capital."

One of the key challenges in Brazil is the relatively high cost of logistics—corresponding to some 15 percent to 18 percent of GDP as compared to 8.2 percent in the U.S. According to Karas, reducing these logistics costs would help boost trade.

At the same time, major maritime players are targeting the region in an effort to maximize their extra capacity. Last

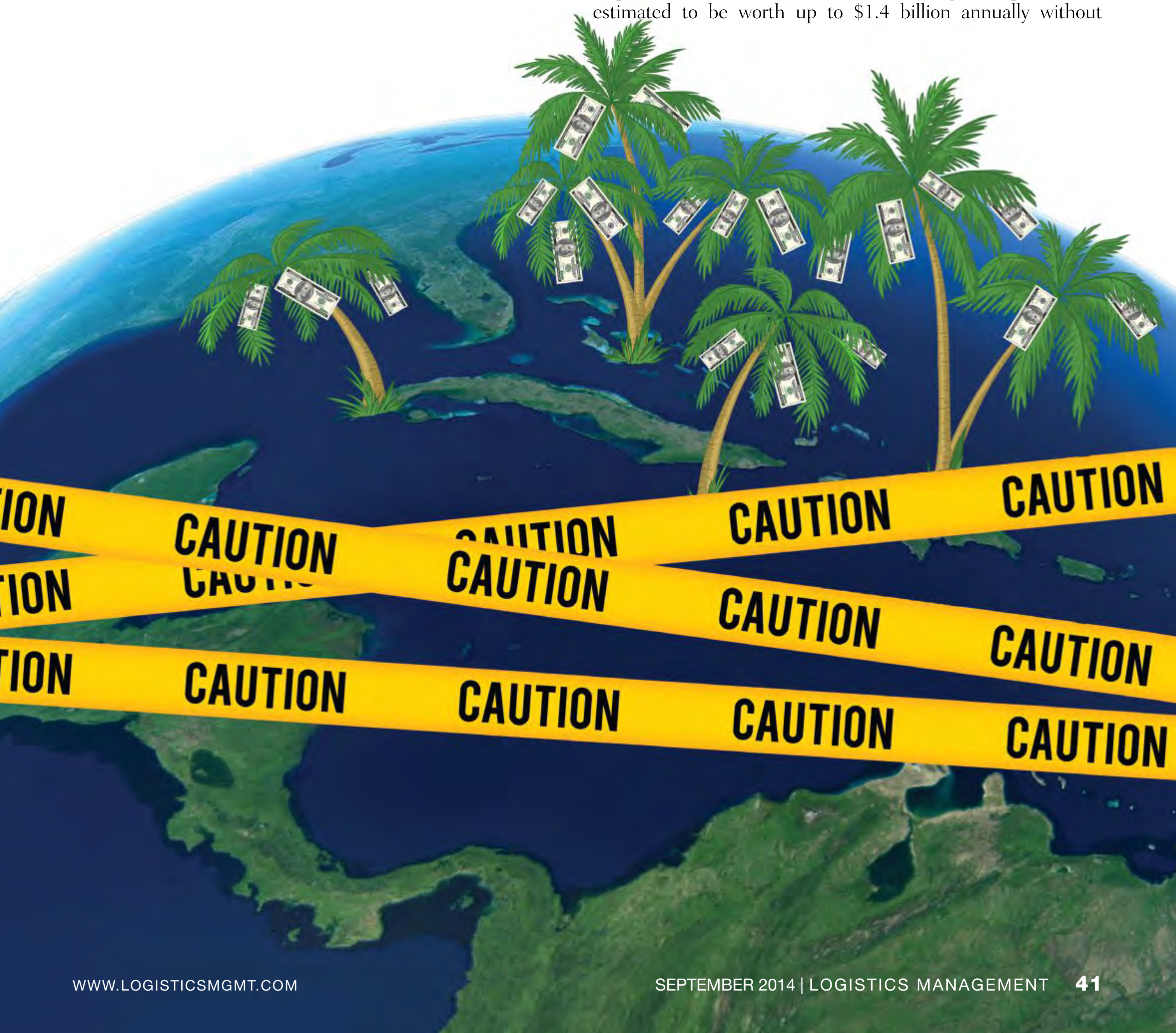
CAUTION

year, Maersk Line introduced a new type of container vessel to the South American market, the so-called SAMMAX (South America Maximum) vessels.

These ships carry 72 percent more containers per vessel compared to Maersk Line's previous vessels on that trade lane. In spite of their larger size and capacity, the ships have been constructed to pass through shallow waters, which historically have limited the benefits of larger ships in Brazil.

"The ships have a positive effect on the ports at which they call," says Karas. "For example, in Brazil's biggest port, Port of Santos, their average berth productivity is now 37 percent higher than with the previous Maersk vessels."

According to Karas, this accelerates port turnaround and reduces the overall waiting time for shippers. That has a "trickle-up" effect offering a trade growth potential for the markets the ships connect. In Santos alone, this trade growth potential is estimated to be worth up to $1.4 billion annually without



upgrades to the port.

Meanwhile, Brazil has significant social, environmental, and economic reasons for "going coastal." Today, coastal shipping only transports cargo volumes corresponding to 4 percent of that moved by road transport. Switching freight to coastal shipping would cut road accidents, road maintenance, medical and material costs, as well as emissions.

Maersk estimates that about 2.7 million twenty-foot equivalent units (TEU) can be moved from trucks to coastal ships. This may not sound like a lot, but it corresponds to an 800 percent growth of the coastal shipping industry. According to Karas, this modal split could reduce road accidents by approximately 36,000 per year at a cost of up to $1.7 billion.

Multiple models to development

These indirect, highway-related external costs may at times not receive the desired attention, say analysts for the World Economic Forum. However, if they did, the case for countries expanding coastal shipping appears convincing.

"Throughout Latin America, governments and civil society have pursued the development of logistics, with specific approaches reflecting national challenges and limitations," says Rodolfo Sabonge, vice president of market research analysis, for the Panama Canal Authority. "In Central American countries such as Honduras, for instance, the focus is on developing road infrastructure and north-south connectivity."

Guatemala is pursuing a grand plan for a "Technological Corridor" that includes a 372-mile highway system, a transnational railway for container transport, upgrades of container port terminals on both its coasts, and construction of hydrocarbon storage facilities.

Costa Rica's capital city lies in an agriculturally-rich highland valley in the middle of the country. Logistics managers there are preparing for expanding light manufacturing activity and government investment in road development to facilitate exports.

Colombia, an agricultural powerhouse and oil and natural gas exporter, with decades of experience in light manufacturing and a much-improved security situation over the last decade, is expanding its logistical capabilities on both coasts investing in its duty-free areas and dredging its ports.

Looking only at Central America, the U.S. Census Bureau expects the population to expand by 25 percent between 2010 and 2030. The Mesoamerican sub-region, understood as a common economic space, spanning the area between Colombia and Mexico, is home to over 200 million people. It lies on a relatively narrow strip of land between the Atlantic and Pacific oceans, making it a global east-west link as well as a north-south trade corridor for people and goods within the hemisphere. At its narrowest junction—connecting different regions and continents—lies the Panama Canal.

Canal expansion on schedule

Industry-wide consensus is that the Panama Canal expansion currently under way constitutes a paradigm shift for world maritime trade. At the very least, say experts, it will create greater economies of scale in sea transport, allowing 12,600 TEU ships to use the new locks.

At present, the canal can accommodate container vessels of up to 4,400 TEU. The expansion project will be a boon for other sectors indirectly linked to Canal traffic, further benefiting from the many competitive advantages. This includes Panama's "dollarized" economy, fiscal incentives, and favorable legal framework for services industries including merchant marine registry, an international banking center, and legal services.

The Canal is the main driver within Panama's logistics cluster, and, in turn the cluster strengthens the Canal's position as an optimal transit option.

"This cross-sector synergy has a multiplier effect and increases the country's overall competitiveness, as well as that of other countries in the region that can use Panama as a hub," says Nelson Cabrera, manager of business development at Lilly and Associates International, a Miami-based global freight forwarder.

Furthermore, says Cabrera, Panama is turning into the main "transport hub" for the region's markets as it's broadening a trade corridor that connects existing and future consumption centers. "The canal, together with a modern and efficient ports system, makes the country the ideal place for cargo consolidation and distribution," he says.

Patrick Burnson is Executive Editor of Logistics Management

Florida's Latin American rail connection

Depending on who one listens to, the expansion of the Panama Canal is set to be finalized in late 2015 or early 2016. But even if those deadlines are missed, there's irrefutable evidence that U.S. East Coast ports are preparing for more business with Latin America.

Florida, in particular, is investing heavily in infrastructure to accommodate that growth. The Port of Miami recently received its first shipment of Chilean seed corn, which was delivered to Chicago via Florida East Coast Railway (FEC).

The shipment is part of the port's growing intermodal initiative, matching products from Latin America to customers from the U.S. Midwest. With recent improvements to the on-dock rail system, Miami is now able to transfer South American grain from ship, to rail, to market, faster and more efficiently than many other ports in the nation, note trade analysts.

Meanwhile, the opening of FEC's new intermodal container transfer facility adjacent to Crowley Maritime Corporation's Port Everglades terminal is providing shippers with more efficient cargo handling and faster deliveries to Puerto Rico and Caribbean ports.

Crowley's Latin American liner service will be enhanced further with FEC's double-stack intermodal rail network as containers will no longer need to be trucked via interstate highways to and from an off-site rail terminal.

Additionally, the strategic location of the 43-acre, near-dock station is allowing Crowley to handle bigger, heavier break bulk and out-of-gauge cargo more efficiently and cost effectively because of the shorter distance required for transit to the railhead.

—Patrick Burnson, Executive Editor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Order Fulfillment: Locke Supply's path to accurate productivity

Faced with booming volumes and subsequent picking challenges, a leading plumbing and heating products distributor integrated voice picking with its warehouse management system (WMS). They're now fulfilling record volumes more accurately in less time and with fewer people. Here's how they're getting it done.

BY **ROBERTO MICHEL**, CONTRIBUTING EDITOR

The resurgent housing market has been a boon to Locke Supply, a plumbing, electrical, heating, and cooling products distributor based in Oklahoma City, Okla. But along with growing demand came escalating challenges in accurately fulfilling orders to its 160-plus branch stores from its central distribution center (DC) in Oklahoma City.

The stores serve plumbers, electricians, and other contractors as well as consumers across five states. The order mix from the stores is varied, from small plumbing parts or electrical components to big-ticket items like water heaters. Unlike a product manufacturer shipping full pallets or cases to a Big Box store, a core challenge at Locke is accurate picking of items in a pick-to-pack process so that the stores have what they need.

By late 2012, growing demand along with the picking challenges were leading to steadily increasing problems at the DC, according Larry Zeller, Locke Supply's CIO.

"Our primary concerns were to improve picking accuracy, reduce the amount of time it takes to train our people, and along those lines, reduce employee turnover," says Zeller. "There wasn't one particular moment that triggered the decision to change our systems, but our sense was that the problems with order accuracy, training, and turnover were accelerating."

The solution Locke Supply turned to was a voice picking solution from Vocollect by Honeywell that integrates with its warehouse management system (WMS) to provide voice-directed picking. The solution, says Zeller, has fulfilled Locke's productivity goals within the DC, and as a result, is getting positive feedback from managers at the branches.

"Long before the voice system was put in, we encouraged feedback from our branches, and we would frequently hear about problems," says Zeller. "Now after putting in the system, it's just the opposite. We've received a lot of calls and e-mails from the branches telling us how great the accuracy has been."

Picking challenges

Locke Supply has grown from a one-store operation founded in 1955 to a large regional distributor with 166 branches serving five states. The DC's picking takes place during the night shift, with 10,000 to 12,000 order lines per day. Those orders are picked from an inventory of about 27,000 stock keeping units (SKUs) that are normally on hand at the approximately 300,000 square-foot DC.

In 2005, the company implemented the Total Warehouse Logistics (TWL) WMS from Infor to control inventory and operations at the DC. Prior to the voice solution, pickers used radio frequency (RF) terminals to access pick lists, instructions, and record picking activity.

Picking of smaller items is done on a mezzanine level where pickers place the items into cardboard boxes and put them on a motorized conveyer, which then moves the goods down to a pallet building where the store shipments are staged. Workers using lift trucks and motorized picking carts pick larger

“Our primary concerns were to improve picking accuracy, reduce the amount of time it takes to train our people, and along those lines, reduce employee turnover.”
—Larry Zeller, CIO

Larry Zeller, CIO (left) and Shane Bruner, application support analyst, Locke Supply

David McNeese/Getty Images

items from other areas of the DC.

Accurately and efficiently executing all of this picking activity was challenging with handheld RF terminals, explains Shane Bruner, application support analyst for Locke Supply who led the implementation of the voice solution. According to Bruner, workers would have to learn how to scroll through and navigate the terminal user interface as well as how to input the correct information to confirm picks.

“With an RF system, you have a handheld unit that is driven by function keys and what can seem at times cryptic screen messages,” says Bruner “It simply takes longer to train pickers on that type of system, especially if they have no experience with RF terminals. Not only that, in comparison to voice picking, you always have to keep an eye on the device, so immediately, the picker’s attention is cut in half.”

Multiple problems arose from these challenges. Order accuracy was estimated to be in the 95 percent accuracy range. Turnover was high—so high that, at one point, much of the picking had to be done by temporary workers. This left the DC leadership constantly struggling to train temporary workers on how to correctly use the handheld terminals to execute their picks.

Finding the solution

During the time when the problems at the DC were growing, Zeller, Bruner, and another manager for Locke Supply were at an independent conference for users of Infor’s distribution software when they came across a voice picking solution from Vocollect that integrates with WMS data and uses wearable, RF-enabled hardware.

Picking information and instructions are conveyed to the worker via voice command to guide picking activities. Instead of carrying a handheld terminal, pickers have a small terminal clipped onto a belt and wear a headset that keeps both hands free.

When Locke Supply's managers saw the voice solution at the conference, and noted that it had the potential to significantly cut training time and reduce errors, the decision was quickly reached to deploy the system.

While integration between the Vocollect system and TWL was a first and took some extra time to set up and test, implementation of the voice picking itself was completed in under four months, going live in March of 2013.

The solution was rolled out by picking zone, says Bruner, rather than across the whole DC at once. Training for a picker was completed in about three hours—versus the three days it previously took to fully train a picker using a handheld RF terminal. Bruner and Zeller attribute the dramatic improvement in training time to the intuitive nature of voice commands.

> **"With the voice system, you put on the device, you are assigned a zone, and you are off to the races. Everything is voice directed, so it takes much of the complication out of it."**
>
> *— Shane Bruner, application support analyst*

"It's more complicated when you put a device in someone's hands that they have to operate themselves by punching in commands and navigating a screen," says Bruner. "There tends to be this immediate sense that they might mess something up in the way they are using the device, so they don't trust their abilities with the device. By contrast, with the voice system, you put on the device, you are assigned a zone, and you are off to the races. Everything is voice directed, so it takes much of the complication out of it."

Zeller likens the leap in training simplicity to getting voice directions from smart phone map app versus trying to find a location by reading paper maps and street signs. "Your eyes are free, and your hands are free, and you are just following instructions," says Zeller.

Productivity improvements

The training ease of voice-directed picking carries over to operational productivity improvements. Rather than having to navigate on a screen to see pick instruction or find where to record data, everything is a simple audio instruction or prompt, says Bruner.

For example, rather than having to key in the number of items picked for an order, the voice system says, "pick four" from this location, and the worker confirms the pick is fulfilled by responding "picked four" into the headset. The system also uses simple voice commands to confirm that the picker is in the correct zone and guides the picker to the correct aisle and shelf location.

So, instead of scrolling down a screen or using the keypad, the picker simply listens for instructions and verifies by speaking simple responses like "ready." If the user ever wants to double check if the right item is being picked, the picker just calls out "item number" to hear the correct information.

The productivity improvements have been significant for Locke Supply, which uses the solution for all of its picking, though not for put away and replenishment. While picking large items like water heaters takes longer and occurs across all zones, the average pick rate is now around 200 picks per hour, up from around 110 picks under the previous process. At the same time, order accuracy, once down near 95 percent, now exceeds 99 percent accuracy.

"Overall, we saw our picking rate close to double," says Bruner. "I was also amazed at how quiet it was in the warehouse after we first deployed the system because there was no cross talking. Everyone was focused on interacting with the voice system, getting a good pace going, and wanting to move fast."

In Zeller's view, voice-directed picking helps productivity because it takes away the complication and distraction of having to manipulate a device. "With voice, the pickers are focused on the task at hand," he adds.

Deeper improvements

Other improvements attributed to the voice systems, says Bruner, include better battery life for the device hardware. With the old handhelds, at least one battery swap was needed per shift, whereas the voice hardware easily lasts an entire shift on the same charge. The wearable hardware also can't be dropped like a handheld, so repair and replacement issues effectively have been eliminated.

The greater order accuracy in the pick to pack process also has helped the warehouse managers identify problems in replenishment that were not apparent when the picking process was more error prone, says Bruner.

The ease of training and ease of use with the voice system also has helped to "substantially" improve worker retention, says Zeller. Whereas once it was common to have 60 percent of pickers in a zone being temporary help because of the turnover rate, today, the vast majority of picking is handled by full-time staffers.

Best of all, says Zeller, has been the positive feedback from the branches on improved accuracy. The bottom line is that the company is able to more accurately move more orders than ever.

"We're finding we're able to fulfill this increased volume in less time and with fewer people," says Zeller. "Given the volume we are now handling, we would probably be in serious trouble with our DC operations had we not implemented this system."

Roberto Michel is a Contributing Editor to Logistics Management

TMS gets more warehouse aware

TMS and YMS expand on integration and supply chain visibility capabilities, gaining a better handle on warehouse constraints in the process.

BY **ROBERTO MICHEL,**
CONTRIBUTING EDITOR

The biggest trend within the transportation management system (TMS) and yard management system (YMS) markets is not so much incremental features within each market, but capabilities that blend TMS and YMS with other supply chain solutions and enhance visibility in the process.

Whether you call it process orchestration or supply chain execution (SCE) visibility or integration, leading software executives and analysts agree that TMS and YMS are expanding beyond traditional feature sets to help users coordinate overall processes.

"Warehousing, yard, and transportation processes are pretty much connected at the hip, but today, the systems for these domains are often still run as independent processes," says Dwight Klappich, a research vice president at Gartner. "You can't achieve all the benefits if you manage the processes independently instead of seamlessly. That's why vendors are looking at the intersection points between warehousing, yard, and transportation."

Suppliers are focused on making solutions such as TMS more aware of constraints in warehouses and yards, rather than basing transportation plans solely on traditional factors such as freight cost. YMS, meanwhile, is helping shippers respond to pressures from carriers, and also expanding to address the issue of visibility of shipments in transit.

Warehouse aware TMS

The classic problem, says Klappich, is that SCE applications are used in a sequential process without the integration needed to communicate constraints from one domain to another. A common scenario, he says, is for orders to come down to a TMS, where loads, and shipments are optimized based on factors like lowest cost freight or quickest delivery.

Whether the warehouse or yard can handle those plans in terms of factors such as

available dock doors, labor to pick, and labor to load, historically has been considered a downstream execution challenge, says Klappich. However, suppliers are working toward integrated platforms that can address key constraints from each area. "We have opportunities to integrate those areas better," says Klappich.

Data-centric integration between software like TMS and warehouse management systems (WMS) is only a "stop gap" on the road to a holistic platform for execution, according to Mike Mulqueen, a senior director with Manhattan Associates. The real trick, he says, is to make TMS aware of constraints at the warehouse level, so that if, for instance, a palletizer is down, the TMS planning engine or "solver" knows that. "I want to make sure that I can balance my transportation plan so my warehouse doesn't get overloaded," Mulqueen says.

Integration in itself won't deliver this warehouse aware planning, Mulqueen adds. An underlying platform architecture synchronizes TMS, YMS, and WMS activities for Manhattan's users. "The integration platform is the foundation you will need, but the end goal is the complete synchronization of supply chain execution," he says.

Fab Brasca, vice president of global logistics for JDA Software, agrees that more than data integration is needed between TMS and WMS. JDA is working on a "suite strategy" that allows users of JDA's TMS to address distribution center constraints. Essentially, says Brasca, the TMS can model factors such as how many docks there are at a DC, what type of docks are available, and average loading/unloading times. "We have the ability, in the TMS, to model the throughput constraints of the warehouse," says Brasca.

"Omni-channel distribution is driving the overall systems and data model to be more inventory aware in ways that most companies' systems have not been in the past."

—Stephan Craig, managing partner, enVista

Another trend with TMS, adds Brasca, is toward "dynamic and iterative" planning where the optimization adjusts to order changes. With this type of planning engine, he adds, loads aren't finalized until they have to be executed. "This is particularly important in the omni-channel retail environment, where the variability on orders is skyrocketing," he says.

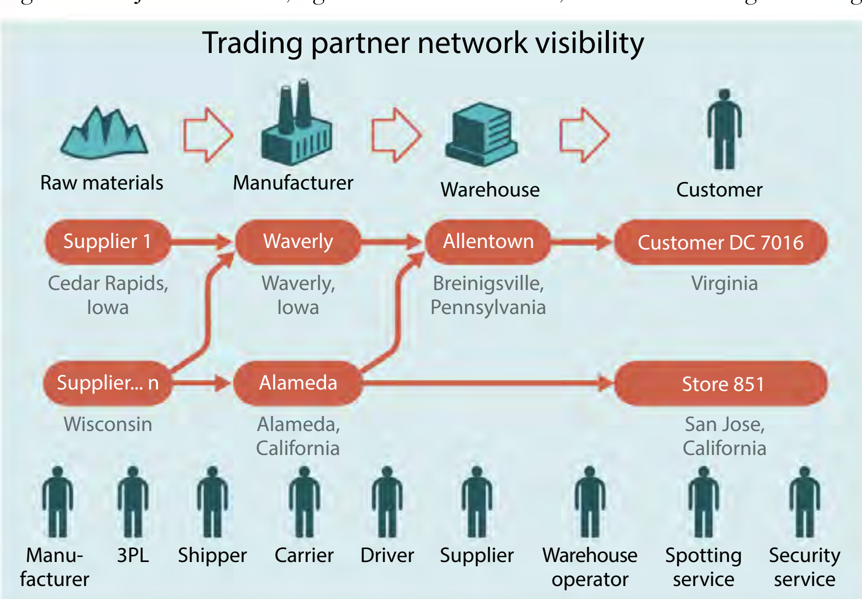
At SAP, there also is a tighter merging of TMS and WMS, says Markus Rosemann, SAP's vice president of global solution management for logistics and order fulfillment. Where this integration at one time had to be relayed through SAP's enterprise resources planning (ERP) system, SAP now offers direct integration between TMS and WMS processes. For example, when a shipment is created in TMS, everything the warehouse needs to know to prepare surfaces in SAP's WMS software. "It's all about creating real transparency about plans, and then coordinating the operations accordingly," says Rosemann.

So rather than having to deal with different numbering schemes for loads, orders or shipments, with direct integration between TMS and WMS, everything related to shipments has common numbering, and it is visible within SAP's WMS solution. The WMS now also has a "shipping cockpit" user interface to coordinate with TMS processes and also display metrics. "The cockpit brings all the relevant information into one environment," Rosemann says.

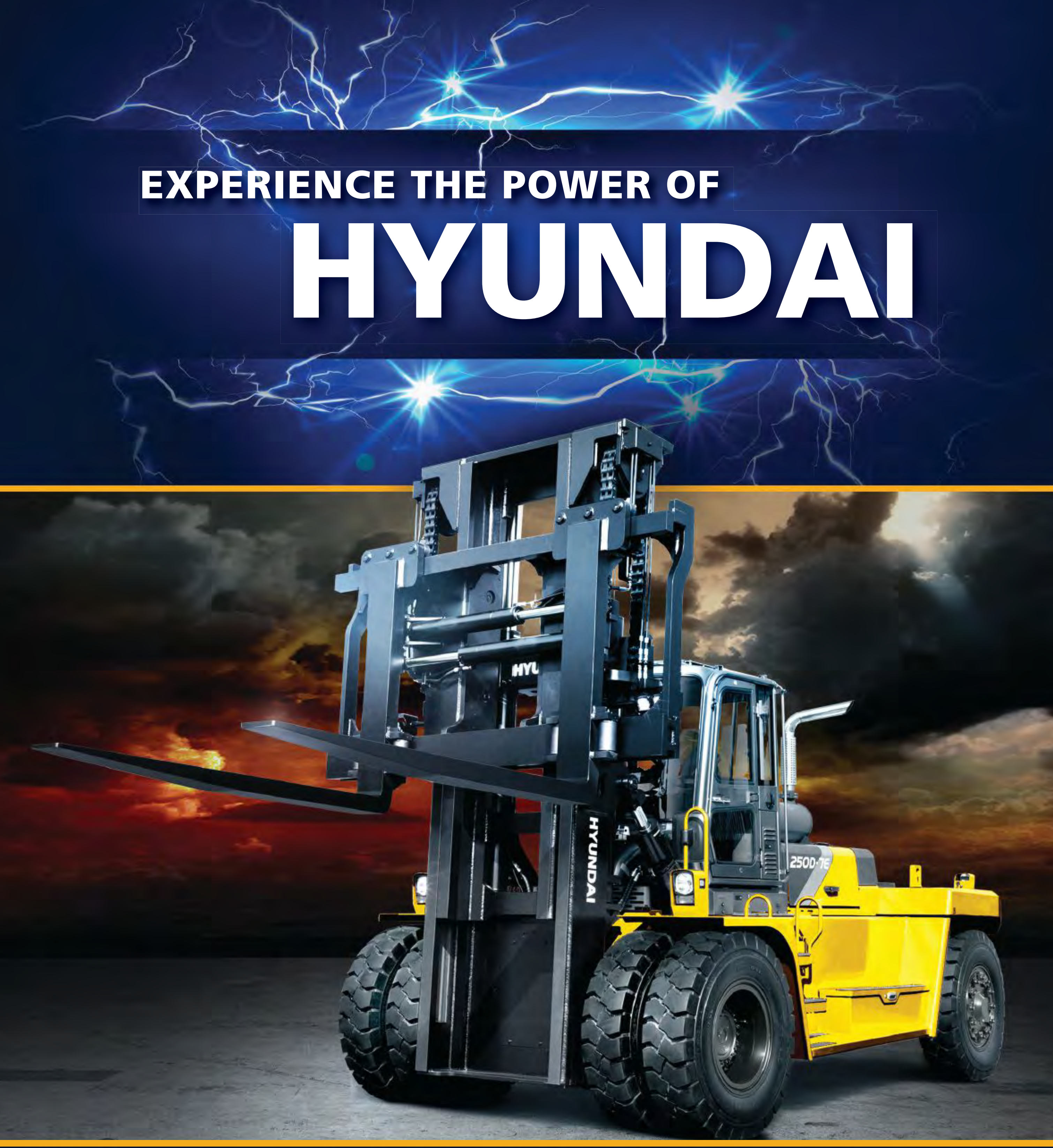
While making TMS solutions more "warehouse aware" is a valid goal, with the trend toward omni-channel, fulfillment not only originates from DCs, but also from stores or suppliers doing drop shipments, according to Stephan Craig, a managing partner with enVista. So TMS needs to be more "inventory aware" regardless of where the inventory sits, Craig says. There are technology developments from suppliers that should help improve inventory awareness, but some of the fix will involve "good old fashioned cleaning up" of bad data and processes, he adds.

"Omni-channel distribution is driving the overall systems and data model to be more inventory aware in ways that most companies' systems have not been in the past," says Craig.

Other TMS trends in TMS, says Gary Gross, a vice president with HighJump Software, are the need for a TMS that can be used on a global basis, as well as one that allows planners to utilize back haul capacity. TMS solutions today also need to be



PINC's visibility suite aggregates operational data from multiple YMS, and also takes in real-time sensor and location feeds from trailer journeys.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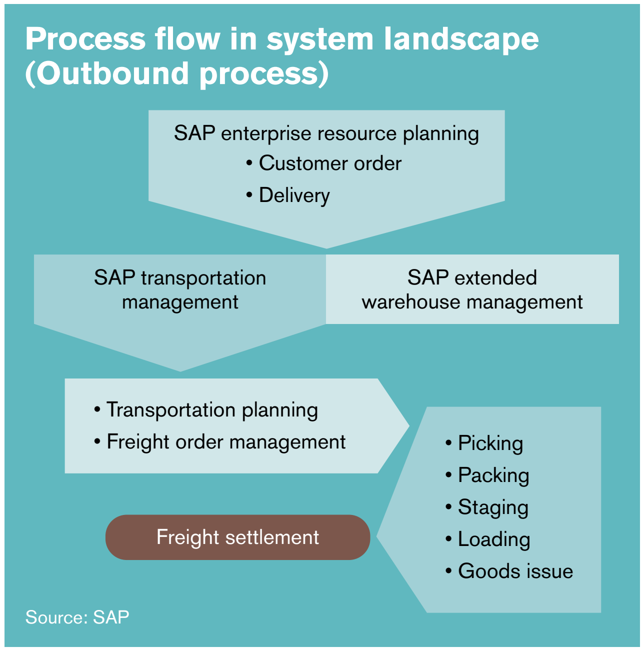
adept at parcel shipment planning and execution.

Gross also sees the need for better integration of TMS with multiple SCE solutions. “Many times when we integrate systems for users, it’s a two- or three-way integration, not just one system to another,” says Gross.



Direct integration between SAP’s WMS and TMS applications provides immediate transparency between orders generated by TMS and any deviations such as what is loaded onto trailers as WMS executes.

Better yard control

Within the YMS market, dock scheduling functionality has been drawing more interest, says Klappich. The driver for this has been pressure from U.S. carriers under hours of service (HOS) rules to have solid appointment windows at yards, rather than having to wait to load or unload.

Carriers who have to wait extra time may charge detention fees to the shipper, which is driving the need for more YMS and dock scheduling capability. “There is real money to be saved here,” says Klappich. “Companies are seeing detention penalties.”

Greg Braun, senior vice president of sales and marketing with C3 Solutions, agrees that there is strong interest in YMS and dock scheduling due to pressure from carriers. It’s even driving relatively smaller yards with fewer yard drivers or “hustlers” to inquire about YMS.

A YMS, says Braun, gives a company tight, real-time control over yard activities and assets, such as the number, location, and type of trailers in the yard. For example, a YMS enables smoother “drop and hook” activities in which a carrier’s truck leaves a load and picks up another trailer. “You need more intelligence to manage yard management processes today,” he says.

At PINC Solutions, the company is applying its experience in real-time locating systems (RTLS) and yard management to the challenges of enterprise-wide logistics visibility. In May, PINC announced Enterprise Visibility Suite Version 4, a cloud-based platform that collects real-time data from sensor and data feeds, and uses the data for the tracking of trailer journeys and other execution processes.

According to Matt Yearling, PINC’s CEO, shippers can gain a real-time grasp over logistics based on such sensor feeds, which are an example of Internet of Things (IoT) technology. “We’re focused on supply chain execution powered by the Internet of Things,” he says. “Invariably what people are looking for is real-time information on trailer shipments, not just in their yards and facilities, but over the road as well.”

In a sense, supply chains can be viewed as one big yard, says Yearling, though with truck routes of several hours or more, you don’t need the pinpoint locating like that within a YMS. A range of IoT-style feeds might be used for tracking goods in transit, from advanced telematics and onboard communications on newer trucks, to simpler feeds based on tracking of a driver’s cell phone signal. Yearling says PINC has also placed RFID tags on trailers to enable trailer tracking between points in a supply chain.

The problem with previous generations of supply chain visibility solutions, Yearling contends, is that they tended to rely on human inputs like keyboard updates to a portal, or phone calls to communicate exceptions. “Many companies are still very dependent on paper, or fingers on keyboards, to track progress. If that’s what you are relying on, you can’t have a truly accurate understanding of what is going on now, and what has transacted in the past,” says Yearling.

Yearling says PINC’s enterprise visibility solution augments TMS, YMS, and WMS by providing a real-time view of progress and exceptions, and giving managers accurate measures on factors like gate velocity, which is a measure of how quickly trucks are clearing gates.

Starting upstream

Suppliers of SCE software, especially those with broader footprints in supply and demand planning, are also looking to tie SCE solutions into upstream planning. After all, says JDA’s Brasca, distribution orders flow from customer demand, so ideally, companies should be looking to link forecasting, replenishment planning, and sales and operations planning with SCE capacity.

For example, says Brasca, replenishment plans can be “bounced” against available resources at the TMS and WMS levels to see what is feasible and optimal. “This adds a whole other level to the efficiency of replenishment planning that most companies can only try to deal with as a downstream execution issue,” he says.

SAP’s Rosemann also sees a need to treat SCE resources in much the same way that manufacturing operations have when learning to optimize production capacity—as a network-wide balancing act, rather than one plant at a time. “What we’ve learned on the manufacturing side 20 years ago is now reaching a point of use in logistics,” he says. “As logistics gets increasingly complex with smaller shipment sizes and higher customer expectations around multichannel, it requires a more sophisticated way of planning, scheduling, and assigning resources.” □

A SPECIAL SUPPLEMENT TO:
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FREIGHT FORWARDERS: Leaders prepare for demand surge

With most economists forecasting robust growth in U.S. manufacturing, global freight intermediaries must be prepared for a spike in new business—and concurrent expectations for higher levels of performance.

By Patrick Burnson, Executive Editor

Productivity of U.S. manufacturing for domestic and global markets boomed over the past two quarters, increasing at a 3.6 percent annual rate and up 2.1 percent from mid-year 2013, note prominent trade analysts. In the coming months, these same analysts believe that productivity will be one of the more-watched global economic statistics.

"This is not only true for manufacturers and retailers moving freight, but for freight intermediaries," says Doug Handler, chief economist for IHS Global Insight.

Rob Knigge, the leader of Accenture's freight and logistics group agrees, noting that freight forwarding and contract logistics continues to be a growth industry based on the uptick in the manufacturing. "Manufacturers and retailers are relying more on freight forwarders to be the managers of their intercontinental supply chains," he says. "Governments are more concerned about safety than ever before, and are thus demanding more transparency of information."

For prominent middlemen, that means staying in front of the ever-evolving supply chain management challenges and getting ready for advanced data, says Brandon Fried, executive director of the Airforwarders Association (AfA). "Most of our economic indicators suggest sustained growth and consumer spending," he adds. "And this means more business and opportunities."

Top 25 "get it"

Manufacturers and retailers are also forcing forwarders to respond to the new marketplace by restructuring their logistics functions. "They're consolidating service providers and functions, sharing logistics facilities, and centralizing management all in an effort to become more efficient," says Evan Armstrong, president of the leading third-party logistics provider (3PL) consulting firm Armstrong and Associates.

Each year Armstrong's firm compiles *Logistics Management's Top 25 Freight Forwarders* list for a closer analysis of industry trends and how those leading forwarders are meeting evolving shipper needs.

"The world's major forwarders are ahead of the curve on compliance and technology," says Armstrong. "That's a big reason why they are so successful," adding that this trend will only gain momentum. Yet, he also notes that the glory days of international transportation management (ITM) companies are fading fast.

"Because the threshold levels of IT and value-added services capabilities are higher, the big guys will grow at the expense of small operators particularly in customs brokerage, transportation management, and end-to-end service," says Armstrong.

However, while the Top 25 have fine-tuned their ability to generate volumes for ocean and air, the industry is changing in ways that puts added pressure on gross margins and further challenge earnings. "We estimate that the market will increase 4.5 percent for this year in the U.S.," says Armstrong. "Other analysts estimate that ocean freight revenue markets alone will rise by 3 percent to 5 percent. Individual company results are a mixed bag, however."

Underlying this mixed bag for

Top 25 Global Freight Forwarders

(Statistical ties in red box)

A&A Rank	Provider	Gross Revenue (US$ Millions)	Ocean TEUs	Airfreight Metric Tons
1	DHL Supply Chain & Global Forwarding	31,432	2,807,000	2,215,000
2	Kuehne + Nagel	22,587	3,578,000	1,134,000
3	DB Schenker Logistics	19,732	1,891,000	1,092,000
4	Panalpina World Transport (Holding) Ltd.	7,293	1,495,400	825,100
5	Sinotrans Ltd.	7,738	8,668,000**	396,100
6	Nippon Express Co., Ltd.	17,317	776,576	668,522
7	Expeditors International of Washington	6,080	916,168	764,376
8	SDV (Bolloré Group)	7,263	790,000	522,000
9	CEVA Logistics	8,517	730,750	513,000
10	DSV A/S	8,140	772,142	259,365
11	Hellmann Worldwide Logistics GmbH & Co. KG	3,433	684,156	549,948
11	UPS Supply Chain Solutions	5,492	450,000	775,000
12	Kintetsu World Express, Inc. (KWE)	2,718	493,000	924,000
13	UTi Worldwide Inc.	4,441	547,000	368,000
14	Damco International A/S	3,212	791,535	226,626
15	Pantos Logistics Co., Ltd.	2,546	1,753,547	224,865
15	Yusen Logistics Co., Ltd.	4,042	550,000	310,000
16	C.H. Robinson	12,752	515,000	115,000
16	Kerry Logistics	2,575	774,000	278,000
17	Agility Public Warehousing Company	4,415	420,000	375,000
18	Geodis	5,828	420,000	210,000
18	Toll Holdings Limited	6,266	494,493	104,740
19	Logwin AG	1,620	530,000	143,000
20	NNR Global Logistics	1,745	120,137	252,068
21	Dimerco Express	481	128,000	176,000

*Revenues are company reported or Armstrong & Associates, Inc. estimates and have been converted to US$ using the average exchange rate in order to make non-currency related growth comparisons. Freight forwarders are ranked using a combined overall average based on their individual rankings for gross revenue, ocean TEUs and air freight metric tons.
**TEUs shown are a combination of freight forwarding, NVOCC, booking agent and custom broker activities.

forwarding is the relationship between the gross domestic product (GDP) and world trade, adds Armstrong. "World trade once represented two or three times the GDP," he says. The last numbers I saw showed slippage of the two indices, so now they're just about equal."

Top-level observations

By way of ranking the three leading freight forwarder players, Armstrong and his staff of analysts provide these anecdotal asides:

• DHL Global Forwarding grew through the acquisition of highly respected companies like Danzas. DHL currently has more than 30 global carrier partners with more than 80 contracts on a multitude of trade lanes and more than 330 gateway facilities.

• Kuehne + Nagel has outpaced the volume growth of the market in all its fields of activity. Sea freight and airfreight business units again led the way. In both areas, high internal productivity and strict cost management compensated.

• DB Schenker's German operations, including Europe's largest rail freight and trucking operations, are over 70 percent of total revenues.

For these three leading players in the rankings, "anticipatory logistics" has become a new part of their strategic plans. "The logistics industry is undergoing rapid and profound changes," says Matthias Heutger, DHL's senior vice president of strategy. "This is especially true when it comes to multi-channel retailing or predictive purchasing."

Markus Kückelhaus, director of trend research at DHL, maintains that forwarders, irrespective of size, will have to prepare for these changes or be left behind. "We live in a dynamic and disruptive world," he says. "And forwarders must do their best to anticipate and adjust to it."

Dr. Thomas Lieb, chairman of Schenker's management board, believes in the power of anticipation, noting that his company has expanded operations in Southeast Asia, the Middle East, and Africa based on that premise.

"In line with our growth strategy, we continue to intensify our own presence


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in interesting markets," says Lieb. "Freight forwarders need to manage the sale and deliverance of a complex service that includes more than just the movement of goods, but also emphasizes technology, reporting, systems integration, compliance, risk management, and often global coordination."

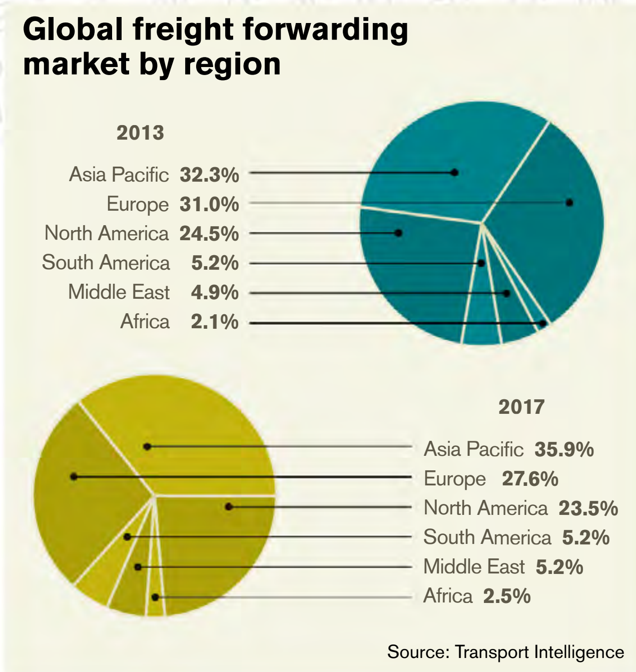
Compliance pressure remains prevalent

Meanwhile, regulatory agencies are bearing down on U.S. exporters, says Beth Peterson, president of BPE, Inc., a consultancy specializing in import/export operations and the development of global supply chain security programs. She says that forwarders of all sizes are increasingly challenged to align compliance with logistics operations.

"All of this means that export teams need to be involved early and significantly in discussions about new products, new markets, or acquisitions," says Peterson. "Unfortunately, many export compliance teams find themselves excluded from key strategic considerations, despite the ramifications to an export program."

Virtually every global freight intermediary and shipper would benefit from automation, adds Peterson, but many companies still don't fully recognize the value of moving to an automated environment.

"Perhaps no other aspect of global trade has more latent value than the automation of compliance processes," Peterson insists. "It reduces the need for both shipper and forwarder to devote human resources to manually re-keying data in documents, or collating spreadsheets from different departments or regions. It improves compliance accuracy."

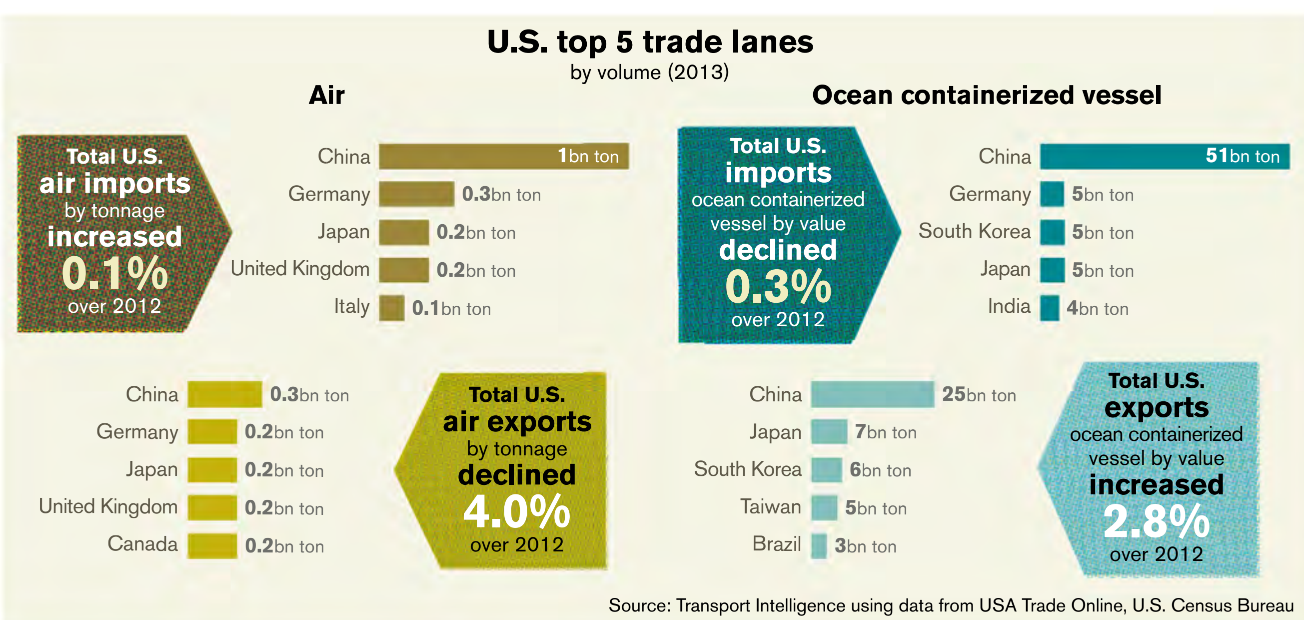


Globalization to localization?

In its annual report titled *Global Freight Forwarding 2014*, analysts for London-based Transport Intelligence (Ti) maintain that some supply chains could undergo a complete circle–from globalization to localization.

"One thing that's certain is that the global logistics industry of the future will be largely unrecognizable from what it is today" says report author Michael Nordmann, adding that forwarders are also looking at new industry opportunities at the same time. "To boost airfreight revenue and tonnage, forwarders look to the perishables and pharmaceuticals industries. For sea freight, it's oil and gas, retail, and e-commerce."

And while freight forwarders target new markets and industries, economic forces are underway, favoring a return to regionalization from that of globalization, adds Nordmann. So, how will this affect



the freight forwarding market?

"It's still too early to say, but solutions such as multi-modal transportation options will likely be one means of survival," offers Nordmann.

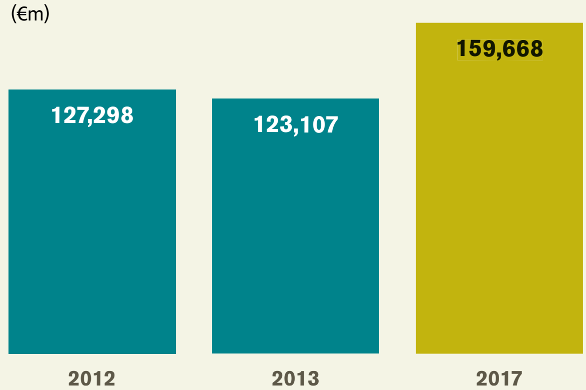
Much of the growth within North America is from the U.S., and for Canada and Mexico, the majority of trade is dependent on this country. The North America Free Trade Agreement (NAFTA) has been hugely successful in fostering more hemispheric commerce, thanks in large part to inter-modal transport.

"Forwarders are helping shippers expand into Mexico to meet the increasing demand for automotive parts," says Cathy Roberson, a Ti analyst based in Atlanta. "For example, Kerry Logistics announced the acquisition of a majority stake in Cargo Master's Group [CMG], a Mexico-based logistics and freight forwarding company. CMG has a domestic network of six offices throughout the country, including Guadalajara, Queretaro, and Monterrey."

Within the same time frame, Kuene + Nagel acquired Perishables International Transportation of Vancouver, Canada. The ports of Vancouver and Prince Rupert give North American forwarders some nice ocean freight options, says Roberson. "And that keeps Asia in the global framework. China maintains the largest market share in the region for freight forwarding, with Japan a distant second," she adds.

Yet even within the Asia Pacific, localization may be gaining traction. Ti analysts forecast that slight gains will be noted by 2017 by Indonesia, Vietnam, and the Philippines. "For each of these countries," says Roberson, "manufacturing is on the rise and will increase freight forwarding activity."

Global freight forwarding market growth and forecast
(€m)



Note: The global market size has been restated for previous years because CEE and Russia figures have been restated.

Source: Transport Intelligence

—Patrick Burnson is Executive Editor of Logistics Management

A SPECIAL SUPPLEMENT TO:
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SPECIAL REPORT

Information Management: In search of supply chain execution CONVERGENCE

The supply chain software market is evolving toward platforms that optimize end-to-end processes and juggle constraints at all levels. Here's how several leading suppliers are making progress on this vision.

By Roberto Michel, Contributing Editor

How can an organization have a full range of supply chain execution (SCE) software at its disposal and still have massive execution problems? A likely culprit is the lack of integration and the inability of SCE solutions to work well together.

The inability to orchestrate logistics processes across the supply chain ranks as a top hurdle for companies, says Dwight Klappich, a vice president at Gartner Research. In a 2013 survey by Gartner, the inability to synchronize end-to-end business processes was named as the second biggest obstacle to reaching supply chain goals.

Part of the problem stems from the evolution of SCE solutions, according to Klappich. Most medium to large enterprises historically were organized by functional domains such as warehouse operations, transportation planning, or customer service organizations, with each group having its own specialized system such as a warehouse management (WMS) or transportation management (TMS) system.

While earlier WMS solutions might be good at controlling inventory and moves within the four walls, they often didn't synchronize well with TMS. Or a TMS could devise a low-cost plan, but was blind to constraints in the warehouse. "Companies would have specialized systems that would able to locally optimize a domain, but the reality is that when you look at the end-to-end processes, companies continue to have significant challenges," says Klappich.

A case in point is how a TMS might group three orders together to cut logistics costs, without considering all tasks surrounding that grouping. For example, the

Top 20 supply chain management software suppliers

No.	Supplier	2013 Revenue	Web site	SCP	WMS	MES/MRP	TMS
1	SAP	$2.138 billion	www.sap.com	x	x	x	x
2	Oracle	$1.455 billion	www.oracle.com	x	x	x	x
3	JDA Software	$445 million	www.jda.com	x	x		x
4	Manhattan Associates	$167 million	www.manh.com	x	x		x
5	Epicor	$159 million	www.epicor.com	x	x		x
6	IBM	$154 million	www.ibm.com	x			
7	Descartes Systems Group	$121 million	www.descartes.com				x
8	Infor Global Solutions	$99 million	www.infor.com	x	x	x	x
9	GTNexus	$80 million	www.gtnexus.com	x			x
10	Kewill Systems	$71 million	www.kewill.com				x
11	HighJump Software	$70 million	www.highjumpsoftware.com		x		x
12	PTC	$69 million	www.ptc.com	x			
13	Quintiq	$65 million	www.quintiq.com	x		x	x
13	Unit4	$65 million	www.unit4.com/erp-systems		x	x	
15	IBS	$55 million	www.ibsus.com	x	x	x	x
16	Totvs	$51 million	www.totvs.com	x	x		x
17	IFS	$49 million	www.ifsworld.com/en/	x	x	x	x
17	Inspur Genersoft	$49 million	en.inspur.com	x			
19	Logility	$48 million	www.logility.com	x	x		x
20	Kinaxis	$45 million	www.kinaxis.com	x		x	

Source: Gartner

warehouse might need to perform kitting on one of the orders, so you might have a carrier arriving for a grouped shipment at 9 a.m. only to find that all orders aren't ready until mid-afternoon. "These types of problems still happen day in and day out," says Klappich.

The remedy, according to Klappich and some leading SCE vendors, is better platforms for orchestrating supply chain processes. Gartner terms this concept "SCE convergence," and sees the market evolving toward platforms that optimize end-to-end processes and juggle constraints at all levels. But Klappich warns that while some suppliers are making progress on this vision, the market as a whole will take time to progress to full convergence.

Convergence is more than theory, however, and is being pursued by organizations such as Penske Logistics, a third-party logistics provider that has used a TMS from JDA Software for many years, and recently decided to deploy a WMS and a labor management system (LMS) from JDA. One key benefit of going with one supplier for multiple applications is that it simplifies integration, says Tom McKenna, senior vice president of engineering and technology for Penske Logistics. "It just smooths the path [for integration] and opens the door for increased customer savings in the long run, and greater efficiencies on our part," McKenna says.

The vision

The supply chain software market will evolve toward convergence in phases, says Klappich, starting with a level one of trying to achieve better visibility by rolling up data into a common analytical system. The second level is tighter transactional integration between SCE applications when it comes to basic data or "objects" such as orders, customers or inventory locations. For the most part, end user organizations are "stuck" at level one or two.

Level three is where previously siloed systems still operate independently, but there is effective bi-directional communication between systems, and activities are synchronized. This level will depend on suppliers using service-oriented architectures (SOA) that support consistency for higher-level processes such as order fulfillment. The fourth and final level, converged optimization, would permit simultaneous


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optimization across functional domains to create feasible plans that take into account constraints across all domains. There is strong bi-directional communication for this level so that an activity in one area can coordinate activities.

At JDA, there has been extensive work to make certain applications, such as TMS and WMS, plan and execute cohesively, says Fabrizio Brasca, vice president of industry strategy for transportation. "Our point of view is to make the transportation solution 'warehouse aware' so that users start off from the get-go building much better plans that account for the constraints in warehouse execution," he says.

Brasca says that even before RedPrairie and its WMS and other SCE solutions became part of JDA, which already had TMS from its acquisition of i2, JDA had worked to make warehouse constraints part of its TMS for purposes such as dock scheduling. "Having those levels of constraints available within TMS means that when plans are created, it's done in a warehouse-intelligent fashion," he says.

JDA is continuing to make more warehouse constraints part of the TMS scope by working on a common data model. In this way, JDA's TMS has insight "into how the warehouse works" so that warehouse personnel aren't "sent scurrying" trying to adapt to siloed

Establishing a contemporary supply chain

Whether it's a "must have" or "nice to have," management and execution software applications are the engine driving today's supply chains.

By Bridget McCrea, Contributing Editor

The technology that drives today's supply chains can be divided into two categories: The "must haves" (the core technologies that shippers need) and the "nice to haves" (those applications that are readily available, but not always completely necessary for every organization). "If you're ultra-small and shipping five SKUs out to your customers, then you may not need any technology at all," says Steve Banker, director of supply chain solutions for ARC Advisory Group. "As your organization begins to scale up, however, then the applications become increasingly more important."

Here, two supply chain experts give their opinions on which applications should be top-of-mind as you build your contemporary supply chain, and which can be saved for a later date.

"Must have" contemporary supply chain technology

- **Warehouse Management System (WMS).** "On the fulfillment side, you don't have to scale up much before you would need a light WMS," says Banker. Such systems lack the labor-saving features and functions of a full-blown WMS that can also handle yard management, third-party billing, and dock scheduling, for example, but provide "virtually 100 percent accurate inventory counts and get you very close to 'perfect order' on the warehousing side," Banker says.
- **Transportation Management System (TMS).** Once you go beyond parcel shipping, a TMS becomes necessary for managing less-than-truckload (LTL) and truckload (TL) options and managing other supply chain complexities. TMS helps companies efficiently, reliably, and cost-effectively move freight from origin to destination. Able to handle everything from parcels to bulk commodities, TMS encompasses solutions for moving freight in all modes, including intermodal movements.
- **Enterprise Resource Planning (ERP).** These systems of record are the backbone of supply chain management and serve as a platform for all of the other applications. Most include advanced planning and scheduling applications, for example, that help shippers tackle functions like demand planning, inventory planning, and inventory optimization, the latter of which sometimes falls into the "nice to have" software category, according to Chad Eschinger, vice president of research, software and supply chain management for Gartner.

"Nice to have" applications

- **Yard Management System (YMS).** These systems track and report on what goes on outside of the warehouse walls and away from the dock doors. At its core, YMS handles the scheduling of inbound and outbound freight appointments while effectively managing yard resources.
- **Labor Management System (LMS).** Used to manage and track the labor activities for distribution operations, LMS typically incorporates real-time interaction with warehouse systems to report on labor activity—and then compare that activity against historical data and established labor standards. "Where you may have been running by the seat of your pants, an LMS helps you determine labor levels and the best usage of human resources," says Eschinger.
- **Global Trade Management System (GTM).** For managing global trade, these systems help shippers gain visibility, collaborate with trading partners, and "get better control over goods in motion as they come into port," according to Eschinger.
- **Automated Procurement System.** Used to manage both direct and indirect spend, platforms like Ariba "automate the process for tendering offers and putting orders out for bid," says Eschinger.

plans, according to Brasca.

Penske Logistics, which started the rollout of a WMS in Q1, is optimistic that this sharing of key constraints across domains will bring benefits, according to Eric Hepburn, vice president of distribution center management for Penske. "In a streamlined world, where we are managing the transportation, and we have an understanding of what the capacities are within the warehouse, and [TMS and WMS] systems are talking to each other, then the workforce that needs to be there to receive trucks, and do everything surrounding that activity is there and ready," Hepburn says.

For Penske, getting fully onto the new platform will take some time. Today, even within warehouses that use Penske-owned systems, three different WMS systems are running. But eventually "everything that's on a Penske solution will be going toward one platform," Hepburn adds.

Different methods

SCE suppliers tend to emphasize different technologies in the pursuit of convergence goals. Oracle, for instance, offers a logistics orchestration solution built on top of its business process management (BPM) engine. The solution is called "Oracle Fusion Distributed Order Orchestration" and enables companies to cohesively manage orders across diverse systems, according to Derek Gittoes, vice president of logistics product strategy for Oracle.

The solution's scope spans all the way up to order promising, but also helps orchestrate execution solutions such as TMS and WMS. "The reason we built a system like Distributed Order Orchestration is so that organizations can have that end-to-end view of all those steps in the process, and to be able to instruct all those previously siloed systems to do what they need to do in a coordinated way," Gittoes says.

Oracle has also worked to build tighter integration between its TMS and WMS solutions, Gittoes says, but the orchestration solution is unique in that it provides a platform for coordinating many types of systems. He also emphasizes that the solution is not a raw BPM engine that needs to be configured by tech experts, but an application with predefined content and easy-to-use setup tools "that are done in a language that an order fulfillment or logistics person understands."

At Manhattan Associates, several years of work have gone into its Supply Chain Process Platform, a common foundation for optimization and integration for all its SCE applications, says Eric Lamphier, senior director for product management with Manhattan. The platform supports workflows that can be either "warehouse initiated" or "transportation initiated," and which consider constraints across multiple domains regardless of which solution is kicking off the workflow. "When other products are being asked to respond to a workflow, they have to honor their own capacities and thresholds," he says.

Aiding the effectiveness of cross-domain workflows, says Lamphier, are the years of work Manhattan has put into creating a set of common business objects. Creating a common data model is a significant undertaking that is difficult to accomplish, especially for suppliers who keep acquiring solutions or haven't committed the development resources to the effort, he says. "Without that

IN CASE YOU MISSED IT:

11th Annual Software Users Survey shows that caution lingers

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

Conducted annually by Peerless Research Group (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.

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.

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.

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.

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, a common theme across this year's user 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.

common data model, the other building blocks you put on top of it are hard to keep in place," Lamphier adds.

SCE solutions at SAP also make use of a common data model and workflows, says Markus Rosemann, vice president of the global solution management team for logistics and order fulfillment at SAP. The supplier's most recent set of SCE solutions also are built on SAP's HANA in-memory data platform, a data management foundation that he says handles real-time analytics while simultaneously handling real-time transactions.

According to Rosemann, HANA will spot patterns in SCE processes that can be used to improve planning and adjust execution. "With our HANA platform, we can really support Big Data, recognize patterns, and learn," he says.

Rosemann also contends it's vital to use today's platforms to improve higher-level processes such as order-to-cash or trade compliance, or to help manage the complex fulfillment networks that are arising due to the demands of consumer digital commerce. "You want to be able to make the [execution] picture more holistic and have all of this information in a common technical platform, but also relate everything back to the overall business processes," he says.

End goals entice

Klappich sees technologies such as workflow and BPM as key to helping fulfill the convergence vision, but he warns that such technologies require effort to properly configure to meet the most pressing needs of a supply chain. "You've got to be careful not to over-engineer this," he says.

The promise of better integration and orchestration of platforms, however, is that the managers in the trenches will spend less time expediting and fixing flawed plans. As Gittoes sees it, it will make life easier because "there will be fewer mismatches between what is going on in the different silos of the organization."

Penkse's McKenna is enthusiastic about the possibilities of having WMS, TMS, and LMS working in concert without painstaking integration work. "Where we are headed is exciting because it's going to make it easier to get systems up and running, and because we'll be able to be much more precise in our planning and execution," he says. ☐

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.

Mixed reports on Asia Pacific crime

SUPPLY CHAIN SECURITY PROVIDER Freightwatch International has released its semi-annual report on cargo theft in the Asia Pacific region for the first half of 2014, which contains some heartening news for U.S. shippers reliant on trucking, warehousing, and retail.

In those landside sectors, analysts found a total of 53 truck theft incidents for the region so far this year—a decrease from the 115 recorded incidents from the same period in 2013. Furthermore, of the countries reporting thefts, only Cambodia, Malaysia, and Vietnam experienced an increase from 2013 to 2014. This is an impressive 54 percent drop.

Meanwhile, available data indicates a continued trend of fewer facility burglaries and hijackings in India, Malaysia, Bangladesh, and the Philippines. At the same time, China, Vietnam, Cambodia, and Singapore have more commonly reported incidents of fraudulent activities. The overall loss value reported for the first half of 2014 was $12.66 million—substantially lower than the region's $22.79 million loss value in the first half of 2013.

Reported truck hijackings dropped drastically from the first half of 2013, contributing to the overall decrease in the theft rate for the Asia-Pacific region. But the trend of reported incidents has seen a slight shift, as collusion and intrusion became the two most commonly reported *modus operandi* in the first half of 2014 at 36 percent and 34 percent of reported incidents.

The report on individual cargo is less encouraging, with the region seeing an increase in the value of the individual cargo reported stolen, with freight thefts worth more than $100,000, up 34 percent from the previous year. Still, the overall average loss value decreased from $345,417 in the first half of 2013 to $287,911 this year, a 17 percent difference.

To its credit, FreightWatch says that the Asia Pacific region continues to experience "inconsistent and irregular" reporting, which may result in artificially low numbers of documented incidents. At the same time, the company does not chronicle the loss of life associated with cargo theft, but does acknowledge that violence often occurs when vehicles are hijacked.

Far more risk of personal injury or death is evident when an ocean cargo vessel is seized, say analysts at the Piracy Reporting Center at the International Maritime Bureau (IMB).

In Southeast Asia, at least six known cases of coastal tankers being hijacked for their cargo of diesel or gas oil have been reported since April of this year, sparking fears of a new trend in pirate attacks in the area. Until then, the majority of attacks in the region had been on vessels, mainly at anchor, boarded for petty theft.

IMB Director Pottengal Mukundan calls the recent increase in the number of successful hijackings "a cause for concern," and is advising ocean cargo carriers to maintain strict anti-piracy measures in these waters—and to report all attacks and suspicious approaches by small craft.

Indonesia accounts for 47 of the reported incidents with vessels boarded in 40 reports. The overwhelming number of these incidents are low-level thefts against vessels. At Pulau Bintan, 18 incidents were reported, prompting the Indonesian Marine Police to add this port to the list of 10 areas where patrols have increased this year.

"In Southeast Asia, at least six known cases of coastal tankers being hijacked for their cargo of diesel or gas oil have been reported since April of this year, sparking fears of a new trend in pirate attacks in the area.

Dryad Maritime, a maritime security consultancy, agrees that Southeast Asia remains the area with the highest number of maritime crime incidents. The boarding of vessels underway in the area of Singapore occur regularly, with 12 such cases now reported during 2014. Nineteen vessels also reported robberies, attempted robberies, and suspicious approaches in the anchorages to the east of the Singapore Strait.

Dryad reports that it's not expecting to see the level of maritime crime fall in this region for the remainder of the year unless there's significant investment by local maritime forces in proactively countering this crime.

Might U.S. shippers consider this be another argument for near-shoring? Pacific Rim consultants suggest that indeed, security concerns may be enough of an incentive when all other considerations have been examined. ☐


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