

# MODERN MATERIALS HANDLING®

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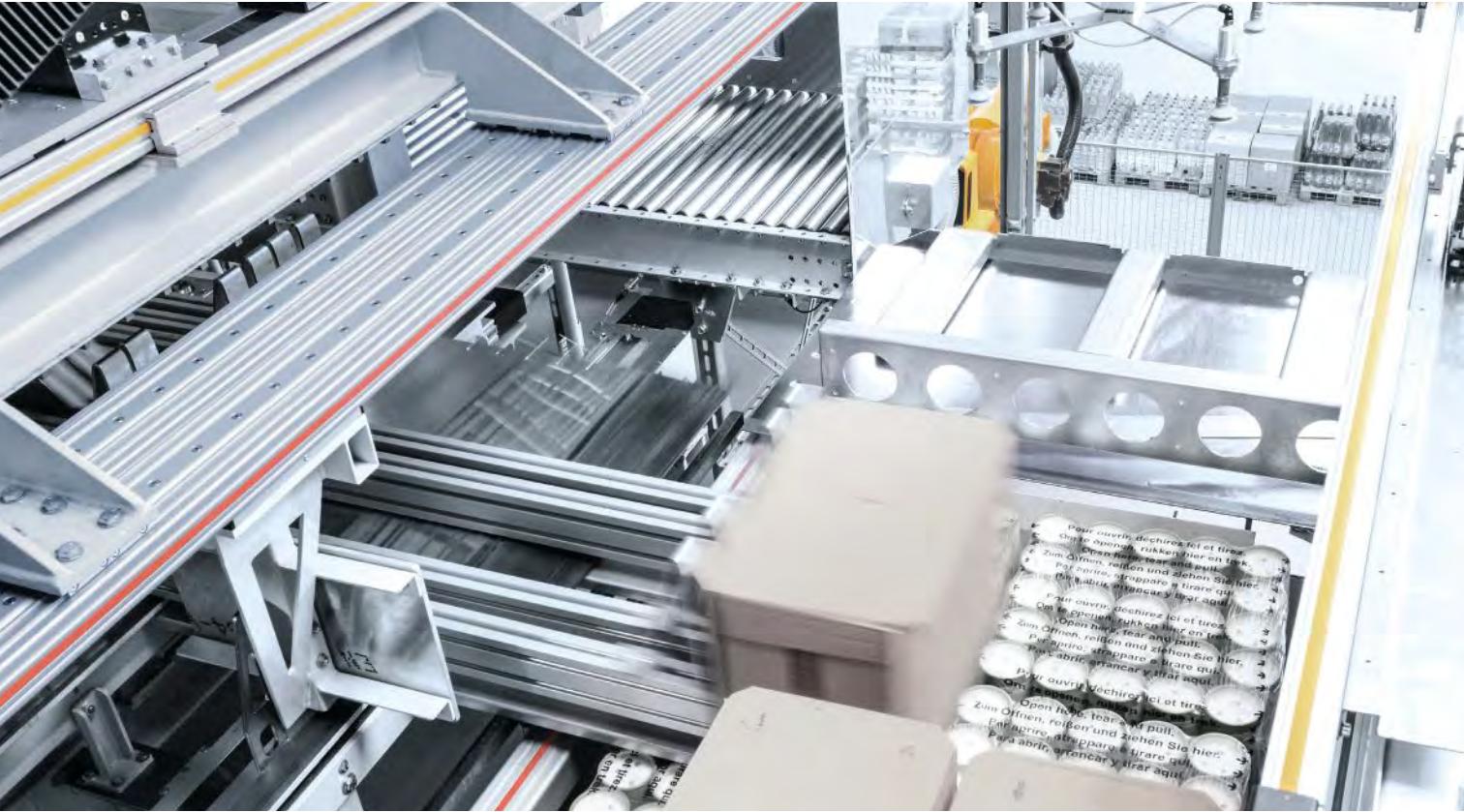
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Mary Grim, vice president  
of operations, AcuSport

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# Regal Beloit acquires Emerson's Power Transmission Solutions business



REGAL BELOIT CORP. has acquired the Power Transmission Solutions business (PTS) of Emerson Electric for approximately \$1.4 billion.

"PTS will broaden our portfolio, diversify our end-market exposure and strengthen our global footprint," said chairman and CEO Mark Gliebe. "PTS brings complementary products and well-known brands, but more importantly a very talented team who are experts in their markets as well as very strong operators."

PTS manufactures, sells and services bearings, couplings, gearing, drive components and conveyor systems under industry leading brands that include Browning, Jaure, Kop-Flex, McGill, Morse, Rollway, Sealmaster and System Plast. With annual revenues of approximately \$600 million, PTS has more than 3,000 employees around the world. PTS will become part of Regal's newly defined Power Transmission segment.

## I.D. Systems to develop vehicle management system deployed by Toyota

I.D. SYSTEMS HAS ENTERED A strategic partnership to develop and deploy a new vehicle management system (VMS) under industrial equipment manufacturer Toyota Material Handling U.S.A.



Toyota's Command VMS will be powered by I.D. Systems' patented wireless technology and cloud-hosted in a secure data center, said Kenneth Ehrman, I.D. Systems' chairman and CEO. "The system's on-vehicle hardware will be a custom version of our fourth-generation VAC4 hardware platform, leveraging either existing Wi-Fi or stand-alone VHF/cellular for implementation with minimal IT involvement."

A wireless VMS improves workplace safety and security by restricting vehicle access to authorized operators. It provides electronic vehicle inspection checklists, senses impacts and reduces costs by scheduling maintenance according to actual usage.

## MSSC contributes to workforce skills certification goals

THE MANUFACTURING INSTITUTE has announced that its partners have already issued 419,528 certifications, putting the institute's Skills Certification System on track to beat the original five-year goal by well more than a year. In June 2011, President Obama endorsed the institute's five-year goal of 500,000 industry certifications issued within its Skills Certification System.

"This achievement is eloquent testimony to the value of industry-recognized, nationally portable certifications as the solution to the skills gap challenge facing manufacturers nationwide," said Leo Reddy, chairman and CEO of the Manufacturing Skill Standards Council (MSSC). "These stackable certifications, endorsed by the National Association of Manufacturers, offer a promising career pathway for millions of Americans to enter rewarding careers in advanced manufacturing."

Within the Skills Certification System, MSSC focuses on the industry-wide core technical competencies for front-line work, which constitutes more than 70% of the jobs in manufacturing and logistics.

## PMMI and Koelnmesse join forces for new processing/packaging show

PMMI, PRODUCER OF the Pack Expo portfolio of trade shows, has entered into an agreement to co-produce a new U.S.-based trade show with Koelnmesse GmbH, the leading producer of nutrition-related trade fairs in Europe and Asia.

Koelnmesse's trade fairs include the Cologne-based Anuga FoodTec, the international supplier fair for the food and beverage industry. The new event will focus on processing and packaging technologies serving the food and beverage marketplace.

"Koelnmesse, and its Anuga FoodTec show, are world leaders in food and beverage process-

ing," said Charles D. Yuska, president and CEO of PMMI. "With shows dating back nearly 100 years, the experience and recognition that Koelnmesse and Anuga bring to the table, particularly in Europe, is invaluable."

The new show, which will launch in spring 2017, will provide an opportunity for manufacturers in this arena to discover the solutions that will help them grow their businesses.





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Mary Grim,  
vice president  
of operations,  
AcuSport

PHOTO: CHRIS CONE/GETTY IMAGES

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Modern Materials Handling® (ISSN 0026-8038) is published monthly by Peerless Media, LLC, a Division of EH Publishing, Inc., 111 Speen St, Suite 200, Framingham, MA 01701. Annual subscription rates for non-qualified subscribers: USA \$119, Canada \$159, Other International \$249. Single copies are available for \$20.00. Send all subscription inquiries to Modern Materials Handling, 111 Speen Street, Suite 200, Framingham, MA 01701 USA. Periodicals postage paid at Framingham, MA and additional mailing offices. **POSTMASTER: Send address changes to: Modern Materials Handling, PO Box 1496 Framingham MA 01701-1496.**

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MICHAEL LEVANS  
GROUP EDITORIAL  
DIRECTOR



## ProMat 2015: Industry on a roll

To come back from ProMat 2015 and simply say the mood was “upbeat” would be an understatement of substantial proportions.

When the event hit full stride on Tuesday afternoon, March 24, I found myself stopped cold in my tracks—there was no place to move. The aisle in front of me and behind me was full of attendees, some talking in bunches with exhibitors, others just trying to get to their next booth visit or catch up with an old colleague.

There was a palpable buzz in the air that I hadn't heard or felt in many years at an industry trade show, and it was hard not to crack a smile while I patiently waited to break out of the crowd. “I haven't been to a ProMat in 10 years,” said a voice in the pack. “Can you believe this?”

And as I broke away and continued my exhibitor discussions, the vast majority revolved around the idea that not only was this the most “upbeat” ProMat they've been to, but the most productive event they could ever remember in terms of small- to mid-market attendees coming to the table with smart projects being funded by real money.

The spending data trickling in over the past month certainly supports why there were so many smiles in Chicago. MHI's recent economic sentiment survey found that 2014 “finished strong” in terms of sales of equipment, systems and software, and about 45% of their member companies say they expect new orders to grow by 10% to 20% in 2015. Even better news, those members are certain that staffing will grow to keep pace with those sales—especially in aftermarket sales support.

To further add to the buzz, our Top 20 Systems Suppliers by revenue list (page 24)

shows that the top players gained even more strength in 2014 and are on track for continued improvement this year. “Collective growth across the list saw a gain of nearly 3% over 2013, but the combined value of the list is on a meteoric climb,” says associate editor Josh Bond, who put this year's list together.

And as a result of so many projects and commitments being put in place over the last two years, the Top 20 growth numbers will only continue to climb, especially as more small- to mid-market organizations take the plunge and embrace automation to stay ahead of today's fulfillment complexities.

“This month's System Report on AcuSport's Bellefontaine, Ohio, facility is a perfect example of where we're seeing goods-to-person automation filtering down to the mid-market and supporting that Top 20 growth,” says executive editor Bob Trebilcock. “In this case, AcuSport went from a fairly conventional process to new levels of automation that used to be out of their reach. Now, we're seeing more companies their size embracing these technologies and changing the internal culture to support the change.”

But I believe some of the most encouraging recent data supporting the buzz comes out of *Modern's 2015 Warehouse/DC Equipment Survey* that Bond neatly summarizes on page 28. “In terms of investment, we found that *Modern* readers are done with the stop-gap fixes as well as the desperate ‘Hail Mary’ attempts to make the most of resources when they can get them. Instead, they've chosen the middle ground of steadily investing in targeted solutions that position them for efficiency, productivity and growth.”

It sounds like we've come out of the recession a little stronger and a lot wiser.

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## SHOW NOTES

# ProMat 2015: It's all about the software...again

CONVEYORS, SHUTTLES AND ROBOTS WERE ON DISPLAY, BUT AS WITH LAST YEAR'S MODEX, SOFTWARE IS WHERE THE ACTION IS IN TODAY'S MATERIALS HANDLING INDUSTRY.

BY BOB TREBILCOCK, EXECUTIVE EDITOR

AT LAST YEAR'S MODEX, I wrote that "it's all about the software." I may sound a little like a broken record, but it's been a theme at *Modern* of late. I just came back from ProMat 2015 in Chicago, and while there was plenty of exciting mechanical equipment on display, the real talk was software.

Why? Because, increasingly, the hardware is just a means to an end. If you spent any time at the booths of the leading systems integrators, you saw that what's clear is that the software is what makes an increasingly complex order fulfillment processes possible.

This focus on software was driven home to me with two conversations I had last week in Chicago. The first was a vice

president of operations for a leading food processor. I asked him about a pallet handling automated storage technology he had installed in one of his plants. He began by saying "we're having all kinds of problems." But as we talked further, his issues had nothing to do with the operation of the system. Mechanically, it

did exactly what it was supposed to do. The problem, he explained, is that the system was designed and installed to handle the number of SKUs and throughput going through the facility at the time. Since then, requirements had changed and the system couldn't keep up: "We have to tweak the software," he told me.

What, then, are our readers looking for and what does our industry need to deliver? I think it comes down to a couple of things.

**One size does not fit all:** Increasingly, readers are looking for different picking methodologies

and handling solutions within their four walls. It's not just about omni-channel, the buzzword of the day. Instead, I think it has to do more with finding the most cost-efficient way to slice and dice SKUs based on physical characteristics, SKU velocity and order profiles. At the same time, just because a technology works in one facility doesn't mean it's going to work in another, even within the same



At ProMat 2015 in Chicago last month, more than 800 companies exhibited their materials handling and supply chain solutions, but much of the focus was on software.

distribution network.

## **Flexibility, visibility and access:**

Readers want systems that will give them access to more real-time information about what's going on in their

facilities so that they have the flexibility to respond now, not after the fact.

We've moved past the early adopters and software is now poised to become the competitive differentiator. □

materials handling systems and increasing automation in the industrial sector are two of the major driving factors of global conveyor systems market. The developing automotive, retail, and food and beverage industries are also likely to fuel the growth in the Asia-Pacific conveyor systems market.

Europe is likely to hold its dominance over the global conveyor systems market at the end of the forecast period. Latin America region is expected to be the fastest growing conveyor systems market, especially in the emerging economies such as Mexico and Brazil where the industrial sector is booming.

## INDUSTRY NEWS

# ProMat reflects industry confidence

THE SECOND HALF OF 2014 saw strong performance among MHI member companies, with momentum projected to continue through 2015.

This is according to an economic sentiment survey prepared by ProMat sponsor MHI, which this year celebrates its 70th anniversary and 30 years of ProMat.

About 45% of member companies expect sales/new orders to grow by 10% to 20% in 2015, for a total weighted average of 9.2% growth over 2014. To keep pace with sales, staffing will grow at an equivalent rate.

In addition, the results of the 2015 MHI Annual Industry Report were released during a ProMat keynote session. According to this year's survey, customer pricing pressure (51%), demands for faster response times (50%), and rising customer service expectations (49%) are the top three issues supply chain leaders find very or extremely challenging.

In other MHI news, the association released the 2015 Innovation



and Young Professional Award winners.

The Best Innovation of an Existing Product award went to CubiScan for the CubiScan 25 dimensioning and weighing system. The Best New Innovation winner was Forklift Simulator

for its driver training program.

The winners of the first-ever MHI Young Professional Network awards were: Michael B. Romano of Associated for the Mentor Award; and Gregory R. Conner of Bastian Solutions for the Outstanding Young Professional Award.

The MHI 70th Anniversary Celebration generated \$25,800 from event ticket sales and donated it to The Material Handling Education Foundation, which provides scholarships and educational opportunities to students studying in the material handling, logistics and supply chain fields.

With a record 155,000 square feet of exhibit space reserved by nearly 350 companies, Modex 2016 is scheduled for April 4-7, 2016 at Atlanta's Georgia World Congress Center.

## DIVERSITY

# Grant Thornton: U.S. businesses show little progress in advancing women during past decade

THE NUMBER OF WOMEN in senior management roles in the United States has increased by just 1% during the past 10 years, according to new research from the Grant Thornton "International Business Report" (IBR), a survey of more than 5,400 business leaders in 36 economies.

Only 21% of senior business roles in the United States are occupied by women, a decrease from the previous year (22%) and an increase of just 1% from 2004. The research also reveals that of the U.S. women in senior management roles, just 6% are chief executive officers. The majority of female senior business leaders serve in a human resources capacity (44%), as corporate controller (20%) or as chief marketing officer (19%).

"The lack of significant progress during the past decade for U.S. women in senior management is disappointing," said Erica O'Malley, Grant Thornton's national manag-

## AUTOMATION

# Conveyor systems market to post steady growth until 2020

ACCORDING TO NEW RESEARCH from Future Market Insights, the global conveyor systems market is expected to witness a steady CAGR of around 3% to 4% for the period of 2014-2020.

The report suggests growing

demand for food and beverage is propelling the adoption of conveyor systems to boost production rates. To meet the needs and demands of customers, manufacturers are providing highly customized products.

Growing demand for cost-effective

## Finalists selected for inaugural Distinguished Woman in Logistics Award

THE WOMEN IN TRUCKING (WIT) Association has announced the finalists for the inaugural "Distinguished Woman in Logistics" award.

Finalists are Faith Garcia-Ross, vice president, consumer services and Latin American operations, Menlo Logistics, Aurora, Ill.; Kristy Knichel, president, Knichel Logistics, Gibsonia, Pa.; and Jean Regan, president and CEO, TranzAct Technologies, Elmhurst, Ill.

Finalists were selected from an extensive field of high-performing women representing warehousing, traffic and shipping, third-party logistics, supply chain management and related functional disciplines. The winner will be announced by program sponsor TMW Systems on behalf of WIT on April 17.

"Logistics is a fast-paced, highly demanding discipline that is attracting thousands of talented and creative professionals each year," said TMW Systems president David Wangler. "The impressive field of nominees for this inaugural award is a validation that more opportunities are becoming available within the broader transportation industry."

In her role with Menlo, Garcia-Ross helps guide a business that optimizes some \$2.5 billion in annual transportation spend on behalf of customers in more than 20 nations.

Knichel is a second-generation logistics executive who began her career as an intermodal dispatcher in 1997. She and her father launched Knichel in 2003, she was appointed president in 2007, and she has helped direct the company's growth from \$2 million to nearly \$50 million in annual revenue.

As president and CEO of TranzAct Technologies, Regan directs operational and financial activities for the largest woman-owned freight audit and payment company in the United States.

ing partner of Diversity & Inclusion. "Companies have been talking the talk on gender equality for decades, but still too few are walking the walk."

Globally, 22% of senior roles are held by women—a 3% increase from

2004, but down from 24% last year, indicating broad stagnation. Japan remains at the bottom of the list with just 8% of senior roles held by women. Russia has the highest percentage of women in senior business roles in the world at 40%. □

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## Prevent maintenance costs with cost avoidance

*One in 10 calls to a service provider can be prevented if you follow a simple procedure.*

By **Josh Bond**, Associate Editor

As the tools to collect and act on fleet maintenance data improve, it seems fair to suggest a given fleet could probably cost less than it does. But, where to start? Will the most savings be found in aging equipment, batteries, impacts and abuse, planned maintenance practices or parts?

"From a customer's perspective, the biggest bang for the buck is avoidable damage, but another fast-growing area is cost avoidance," says Bob McGowan, fleet operations manager for Yale Materials Handling. "An example of the difference is any time a service call can be avoided."

For example, say a service call is entered because a lift truck won't start. Before the technician arrives, someone else finds that the battery is dead, and it simply needs to be plugged in. "But nobody cancels the call," McGowan says. "That's a huge waste of money. We handle about 300,000 calls a year, and anywhere from 8% to 10% of those are avoidable calls."

To address the problem, McGowan recommends establishing a simple procedure for service calls. An operation might put controls on who is authorized to place a service call, but at the very least McGowan suggests the person who calls should be the person who has already diagnosed the problem. In the event of a quick fix like a new propane tank, the call can be avoided altogether. In addition, the caller should be prepared to provide as much information as they can before a technician is dispatched.

"Say you have a leak," McGowan says. "The color of the fluid helps the technician identify whether it is oil, hydraulic fluid or coolant. Also, where is the leaking hose? On the mast or underneath? The technician can then bring the right tools and parts to fix it the first time."

McGowan advises against becoming overly reliant on telematic solutions, which can't monitor all costs. "Maybe it can automatically enter a service call, and there are plenty of good benefits to that. But, if you look at the components that collect the data, almost all have a wire connected to it. What about hydraulics, mast operation, tire wear, and all the other things not related to what telemetry is measuring?"



In terms of avoidable damage, measuring is only half the battle. The root cause could be the driver, the environment, floors, the warehouse design, a dock plate or other equipment. Customers need to look at avoidable damage, find the problem and find a resolution for the long term, McGowan says. Telemetry can play a big role, he suggests, by pinpointing when, where and who was driving. That data can then be used to educate and empower the driver.

"In the past, the first shift would come in to find a damaged lift truck and second shift would say they didn't do it," McGowan says. "If you have high turnover and spend lots on training already, you might accept some avoidable damage if there are no safety concerns and you know it would cost more to implement an enhanced training program. But you need to know the amount, cause and cost of that damage before you can make that decision."

McGowan suggests many service providers have the records needed to extract the relevant data, and it does not require any large investment to get that information.

---

*Josh Bond is Modern's associate editor and can be reached at [jbond@peerlessmedia.com](mailto:jbond@peerlessmedia.com)*

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# Pallet additives and special formulations help keep food safer

*Metal and X-ray detectors easily identify different proprietary detectable additives in plastic pallets, making it easier to ensure the safety of the product that's being carried.*

By Sara Pearson Specter,  
Editor at Large

Just as consumers have become more aware of the ingredients in their food, so have the operations that handle those products as they travel from farm to fork—specifically with regard to the formulations of the pallets upon which edibles are transported, says Curt Most, senior product manager for ORBIS Corp.'s reusable plastic pallet lines.

"Food processors have become increasingly concerned about eliminating possible sources of contamination in food, including from pallets," Most explains. "So, in addition to offering plastic pallets that are engineered to be easily cleaned and not harbor pests or pathogens, we've developed a variety of special resin formulations and additives to meet those needs."

Some processors have incorporated metal detectors and/or X-ray machines into their handling lines as a means to detect foreign objects. Every pallet load of consumables—particularly produce and other perishables—passes through one of these machines to verify that they are contaminant free.

"Small pieces of debris can be hard to detect with these systems," Most points out. "That's why we offer various detectable additive options to our 40 x 48-inch GMA pallets made of 100% virgin resin."



Metal and X-ray detectors easily identify these types of proprietary detectable additives, making it easier to ensure the safety of the product that's being carried. Should a piece of an ORBIS pallet happen to wind up in the load, either system triggers an alert and stops the line.

Although the plastic pallets are inherently durable, those moved from ambient locations into and out of refrigerated or freezer environments can be more susceptible to damage from impacts. "To compensate for the temperature fluctuations that can affect the

resin—potentially making it more brittle—we also offer a special formulation for those applications," adds Most.

Companies considering a special formulation or additive for their plastic pallets only have to order a minimum of 250 pieces. Most says that the company works closely with customers to make sure that both the correct pallet and the proper handling procedures are put in place.

"We want to be sure that the performance of the material meets their needs long-term, because the pallets are engineered to last long-term," he adds.

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*Sara Pearson Specter is an editor at large with Modern and can be reached at [sara@saraspecter.com](mailto:sara@saraspecter.com).*

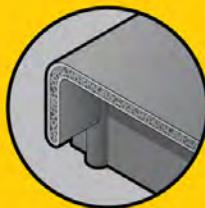
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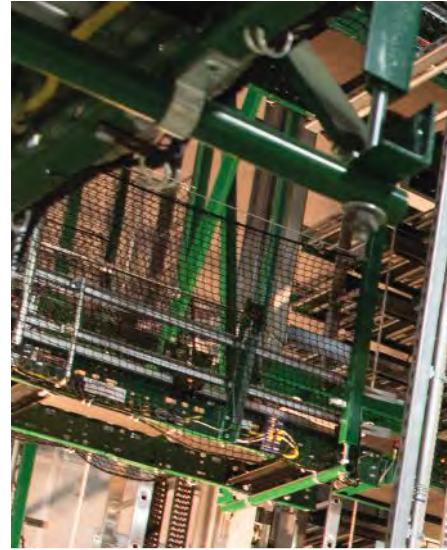


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# AcuSport Corp. Automation that's right on target

A goods-to-person picking solution moved AcuSport from conventional to automated DC processes. The result is lower fulfillment costs and better customer service.

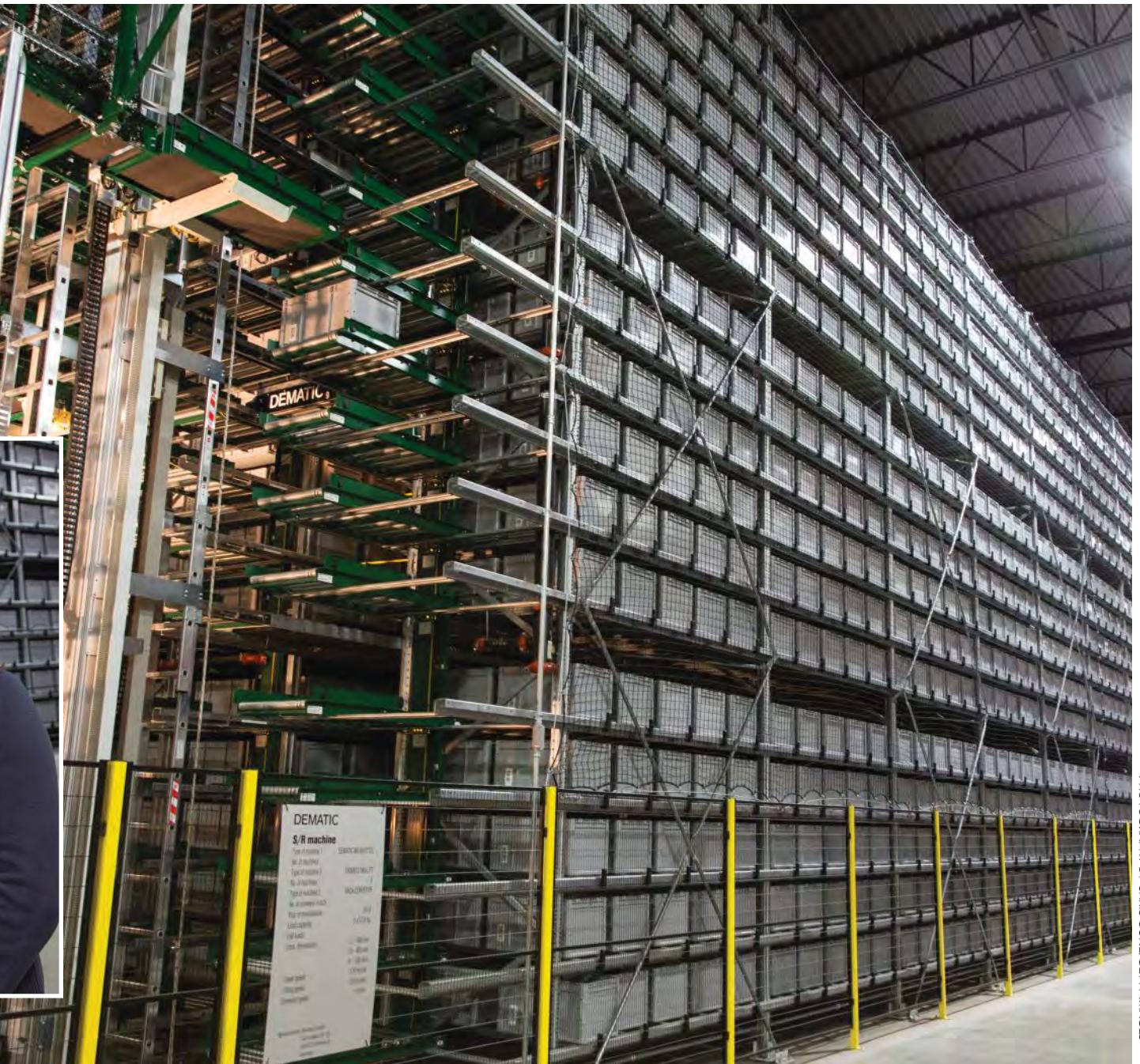
By Bob Trebilcock, Executive Editor



Mary Grim,  
vice president  
of operations,  
AcuSport

**A**cuSport, a distributor of shooting sports products with headquarters in Bellefontaine, Ohio, has a vision to connect the nation's independent retailers with the sport's manufacturers to better serve the consumer. Its focus is on the success of its retail customers (see box: Culture counts).

That vision has led the company to introduce several unique value-added services, like a system to share retail point-of-sale (POS) information across the supply chain and an auto-replenishment service to manage inventory for 1,000 of the industry's independent retailers.



PHOTOGRAPHY BY CHRIS CONE/GETTY IMAGES

Innovations like those are just two of the ways AcuSport distinguishes itself from the pack. “Retailers can buy the same products at similar prices from multiple distributors,” says Mary Grim, vice president of operations. “Our goal is to be their first choice.”

The approach is working. Not only is AcuSport one of the largest distributors in the industry, it is projecting a doubling of revenues over the next four years while broadening its product offerings.

But booming growth creates its own set of challenges. Back in 2012, the 100,000-square-foot distribution center near Columbus was bursting at the seams. What’s more, a

legacy warehouse management system (WMS) and manual picking processes were labor intensive and inefficient. “Our existing space was under utilized and our technology was outdated and difficult to change,” says Grim. She adds that a conventional RF-directed picker-to-part methodology, where order selectors traveled through the warehouse on tuggers and picked orders to carts, “meant we were spending the same amount of time to pick a \$4 cleaning brush as a \$400 firearm.”

Something had to change. Over the next two years, AcuSport more than doubled the size of its DC to 200,000 square feet and implemented a Tier 1 WMS to track inven-



Totes are automatically delivered from the multi-shuttle system to a light-directed put wall. Here, an associate builds shipping cartons for orders.

tory, direct picking and capture serialized information for reporting and compliance. Working with a systems integrator (Dematic, dematic.com), it modernized and automated its picking and packing processes, including new picking methodologies for full pallets and cases; slow-, medium- and fast-moving pieces; and over-sized, non-conveyable products. “We went from a conventional pick environment to a highly automated part-to-picker operation,” Grim says. The WMS went live

in December 2013 and the automated picking systems were operational by July 2014.

Highlights of the project include:

- a two-aisle multi-shuttle that automatically delivers slow-moving items to a light-directed put wall area. About 27,000 of the facility’s 35,000 SKUs are managed by the multi-shuttle;
- a three-level, 18-zone pick module for faster moving items;
- a case pick to conveyor area for full case handling;

- a vertical lift module (VLM) for the secure handling of highly regulated items, such as suppressors;
- a second put wall area to handle oversized non-conveyables such as long guns and accessories; and
- a four-lane shipping sorter.

The end result, according to Grim, is that AcuSport has lowered fulfillment costs, especially on lower cost accessories; improved inventory accuracy and serial number control; improved space utilization; and increased throughput.

“Our ROI for this project was supposed to be five years, and we are poised to exceed that number,” says Grim. “But the biggest benefit is that we are positioned to support our anticipated growth.”

### New business models

Founded in 1965, AcuSport was purchased in the 1980s by the L.M. Berry Co., an international Yellow Pages advertising company founded by Loren Murphy Berry. William Fraim, Berry’s grandson, is the current CEO.

Today, the privately held company has 400 employees, nine sales offices and two distribution centers. A 23,000-square-foot facility in Salt Lake City distributes ammunition and products that are hazardous to ship by air to customers on the West Coast. In all, AcuSport partners with more than 300 manufacturers, including Smith and Wesson, Glock, Remington and Ruger.

The company’s growth has been fueled by the increasing demand for shooting sports coupled with a commitment to bring innovation to a complex, convoluted and highly regulated supply chain.

“In our industry, manufacturers sell directly to large retailers like Walmart, Dick’s Sporting Goods and Cabelas; they sell to multiple distributors like AcuSport; they sell to large buying groups; and, in some cases, they sell directly to independent retailers,” says Grim. Meanwhile, distributors are also selling into some of those same channels. Manufacturers and distributors

### Up and running

How do you maintain an automated materials handling system if you have never had automation in the past?

That’s a question that confronts distributors like AcuSport, who have never needed personnel with the technical skills to work on complex machines, PLCs and sensors or to troubleshoot software. For that reason, vice president of operations Mary Grim says that AcuSport considered the service and support capabilities of potential partners during the selection process.

Instead of adding a supply chain technician to its staff, AcuSport pur-

chased a resident maintenance program from Dematic, which supplied the multi-shuttle, light-directed put walls, conveyors and sorters.

As part of the agreement, a Dematic resident technician works on site at the facility during the day shift. For the less critical second shift, AcuSport can call a 24-hour help desk or turn to an on-call technician in close proximity to Bellefontaine.

“There are about 75 technicians located within 60 miles of our facility who can be here if we really need them,” says Grim. “Fortunately, we’ve had very little downtime.”

**The DC has two goods-to-person pick systems: In addition to the multi-shuttle, a vertical lift module stores and delivers highly regulated items such as suppressors.**

are required to capture serial numbers and validate firearms licenses to maintain a chain of custody for the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF).

AcuSport services the 4,000 or so independent brick-and-mortar retailers, with a focus on the 1,000 that represent about 80% of the market. As that group has embraced technology during the past decade, AcuSport has increased its offerings to include value-added services like Web-based advertising templates and images and product descriptions that make their customers more effective retailers.

AcuSport also launched a “Voice of the Consumer” strategy to connect the industry’s supply chain. That included the purchase of an electronic point-of-sale (POS) platform that enables participating retailers to transmit POS information to AcuSport through a customer exchange link. Sales data is then fed back to manufacturers who use it for collaborative planning, forecasting and replenishment. “In the past, manufacturers pushed product into the market and we ended up with a lot of



## Culture counts

Distribution managers generally focus on processes with measurable metrics to drive improvements in their facilities. However, companies as diverse as lululemon athletica, Lincoln Industries and Legacy Supply Chain Solutions are recognizing that the culture in their facilities contributes to their performance.

Add AcuSport to that list. One element of the DC expansion was to instill a customer focus in associates on the shop floor. That happened in two ways, according to Mary Grim, vice president of operations. First, AcuSport installed electronic boards in the facility to spotlight the inde-

pendent retailers who receive orders from that facility.

Additionally, the team launched its “I work for ...” campaign to remind associates of who pays the bills. On the floor, associates wear T-shirts with “I work for ...” and the name and location of one of AcuSports’ customers printed on the front. The company’s motto: “Helping Retailers Succeed is My Job!” is printed on the back. “Ultimately, we’re trying to connect retailers to manufacturers to better serve the consumer,” says Grim. “We want to bring that mission to life throughout our whole organization.”

inventory in the channels,” Grim says. “Now they can manufacture according to demand.”

That information also allowed AcuSport to begin offering vendor-managed inventory and automatic replenishment services based on minimum/maximum inventory levels set by the retailer. For instance, while firearms bring customers into a sporting goods shop, accessories are the most profitable items. They are also the most labor intensive for everyone in the industry to deal with. “We realized that an auto-replenishment system would save our retailers time,” Grim says. “At the same time, it presented



**A three-level mezzanine features 18 pick zones. In this area, associates receive directions on their RF terminals and pick to cartons that are then conveyed to the next zone until orders are complete.**

us with the challenge of distributing those items at a lower cost.”

### **Automating the conventional**

In 2012, AcuSport initiated an in-depth review of its existing operations. The result of that review was a roadmap for “disruptive growth.”

- The company was committed to doubling revenue over the next four years.

- It wanted to stay focused on its mission of enabling the success of its independent retailers through key programs such as auto-replenishment.

- And, it wanted to make these changes while business was strong.

To get there, AcuSport concluded that it had to double the size of its facility to 200,000 square feet and replace most of its existing systems, including the legacy WMS. In addition, it needed materials handling systems and processes to support its strategies. The resulting revamp of distribution operations took place in two phases.

In early March 2013, implementation got underway for a Tier 1 WMS, which was up and running by the end of the year. Meanwhile, the company broke ground on the expansion of its facility in May 2013 and began the design of the new space and processes to automate its old, conventional ways

of filling orders. The automation went live in July 2014.

At the center of the operation is the multi-shuttle system that handles more than 75% of SKUs. The shuttle system automatically stores and delivers slow-moving products to two picking aisles. Once a donor tote arrives at a workstation, order selectors are directed by the system to place the items into shipping containers in cubbies in a light-directed put wall. Once all the items from the shuttle system are picked for a specific order, the shipping container is placed on a take-away conveyor and sent to packing.

Grim says that shuttle technology

was chosen over other automated storage and retrieval system (AS/RS) technologies based on three criteria:

1. Scalable: It is relatively easy to add more aisles as business grows.

2. Established: While shuttle technology is relatively new in comparison to mini-load AS/RS and horizontal carousel systems, it was not bleeding edge. Shuttles are used by some of the country's largest retailers.

3. Reliable: This may have been the most important consideration. "Getting orders out the door is important," Grim says. "If one of the shuttles goes down, we might lose access to a lane, but we can keep operating." (See box: Up and running)

The shuttle system isn't the only automation. A carton erector feeds shipping cartons to



Lift trucks, order pickers and tuggers are used for putaway and picking in the pallet and case storage areas.



In the put wall area serviced by the multi-shuttle, an associate sees orders on a display screen. Note the "I work for ..." T-shirt, reminding associates of AcuSport's customers.

pick areas and a three-level mezzanine with 18 pick zones that feature a conveyor system and RF-driven pick-and-pass methodology. The mezzanine handles medium- and fast-moving SKUs. Meanwhile, heavily regulated suppressors are stored and picked from a VLM. Another put wall area is used to assemble orders for long guns and oversized non-conveyable accessories.

### Transitioning to automation

While getting new systems up and running is always a job, AcuSport had to pull this off in the midst of an unexpected surge in business in the fall of 2012, following national elections and concerns over gun regulations. "We were in the middle of building the new space, and we couldn't build

it fast enough because we were out of space,” Grim says.

The solution was to operate two distinct warehouses within one space. One part of the team continued to operate the manual space while another part of the team was busy loading inventory into the multi-shuttle, mezzanine and case pick lines; testing the automation; and ramping up for volume in the new area. “We couldn’t just flip a switch and go live because you don’t really get a flavor for how the automation is working until you have a volume of orders, and then you realize there are tweaks that

have to be made,” she says.

Despite all that, the biggest challenge may have been the change management associated with the transition to automated processes. To make it work, AcuSport established a project management office at the corporate headquarters and assigned a team just for this project.

Expertise that wasn’t already in the organization was hired, including a director of distribution and additions to the IT department. Individuals from operations were taken off their normal duties so they could become experts

in the WMS and automation systems. “Had we not taken those steps, it would have been very difficult,” Grim says.

While Grim says that her team is still learning to use automation, the system is already meeting its promise. “Four months after going live, we saw throughput improvements of 30%, and we are projecting an increase in productivity that is five times our current level,” she says. “Long term, we plan to go to a 24-hour/5-day-a-week shipping operation. We’re not there yet, but we now have a system that can support us when we get there.” □

## AcuSport moves from conventional to automated

AcuSport’s new distribution center features multiple picking methodologies designed to lower the cost of the company’s auto-replenishment program.

In AcuSport’s Central Ohio distribution center, technologies such as an automated multi-shuttle storage and retrieval system, a three-level case pick module and a conveyORIZED case pick line come together to fill orders for a network of independent retail customers.

**Receiving:** Roughly 90% of the product received in Bellefontaine is palletized. Product is staged in receiving (1) and verified by the receiving team. The warehouse management system (WMS) generates license plate bar code labels and determines the storage location.

**Putaway:** A lift truck operator scans the license plate bar code label and is directed by the WMS to a putaway location in reserve storage for pallets (2) and cases (3), the multi-shuttle (4), a pallet and case pick line (5) or a pick module (6).

- Reserve storage (2, 3) and pallet pick line (5): The operator confirms the putaway by scanning the location and the pallet bar code labels. The inventory is now available in the WMS.

- Multi-shuttle putaway: Pallets are delivered to a decant station (7) where items are scanned into a storage tote that can hold up to eight different products. The warehouse control system chooses the storage location.

- Pick module: At the pick module (6), cases are depalletized and scanned into a picking location.

**Picking:** The facility supports five picking processes.

1. *Full case and pallet picking:* Order selectors are given a batch of orders and directed by the WMS to pick locations in the full pallet and case pick lines (5). Pallets are picked (5) and delivered to the shipping area (8). For case picks,

associates apply a label and place the case on a takeaway conveyor (9). Cases are conveyed to a value-added packing area located on a mezzanine (10) over shipping. Cases are prepared for shipping, closed and conveyed to the shipping sorter (11).

2. *Goods-to-person picking:* The multi-shuttle (4) delivers totes to a goods-to-person station in the put wall area. When the associate scans a label on the tote, the system identifies the right sized shipping container for that order which is scanned into a cubby location in the put wall. The system then displays on a screen the item to be picked, its location in the storage tote and the required quantity. Once the items from that tote have been picked into shipping containers, the tote is automatically conveyed back to the multi-shuttle. Once all of the items for

### AcuSport Corp. Bellefontaine, Ohio

**SIZE:** 260,000 square feet in Ohio, including office space; 23,000 square feet in Utah.

**PRODUCTS:** Hand guns, long guns, ammunition and shooting sports accessories

**SKUs:** 35,000

**THROUGHPUT:** 8,000 to 9,000 lines per day

**EMPLOYEES:** 135 employees in operations

**SHIFTS PER DAY/DAYS PER WEEK:** 2 shifts per day, 6 days a week.

an order have been picked, the associate places the container on a takeaway conveyor. The shipping container can then be conveyed to the pick module (6) for more items or to packing (10) if the order is complete.

3. *Pick module:* The three-level pick module (6) is for faster moving SKUs. An order is initiated when an associate applies a label to a shipping container from the box erector (13) and inducts (14) it into the system. When the container arrives at one of the 18 pick zones, the associate scans the label and is directed by the WMS to a pick location; there, the associate scans the location label and is told what quantity of items to pick. Once the item and its serial number are scanned into the shipping container, it is pushed off onto a takeaway conveyor (9) and the associate repeats the process for the next pick.

4. *Long guns and non-conveyable items:* Long guns and non-conveyable accessories are batch picked to a

pallet, with up to 80 items to a pallet. The pallet is then delivered to a long gun put wall (15) large enough to accommodate oversized items. On one side of the wall, an associate scans the bar code label and serial number of items and places them in a container in a cubby location. Once all of the orders for an item have been picked, a light on the other side of the put wall tells a packer that the order is complete. The packer erects a box; scans the appropriate serial numbers; and manually packs the box. Those items are then palletized and delivered to shipping (8).

5. *Suppressors:* Silencers and suppressors, which are highly regulated, are stored and picked from a vertical lift module (not shown).

**Packing and shipping:** Cases and shipping containers are conveyed to the pack station (10). The contents of the order are verified, any value-added services are performed and packing materials are added. Once a container

### System Suppliers

**SYSTEM INTEGRATOR, SHUTTLE SYSTEM, PUT WALL, LIGHT-DIRECTED PICKING AND CONVEYOR AND SORTATION SYSTEM:**

Dematic

**PROJECT CONSULTANT:** Sikich

**LIFT TRUCKS AND PICK MODULE:** Crown

Equipment Corp.

**WMS:** Manhattan Associates

**VERTICAL LIFT MODULE:** Hanel Storage

Systems

**PALLET RACKING AND SHELVING:** Steel King

Industries

**CARTON ERECTORS:** Pearson Packaging

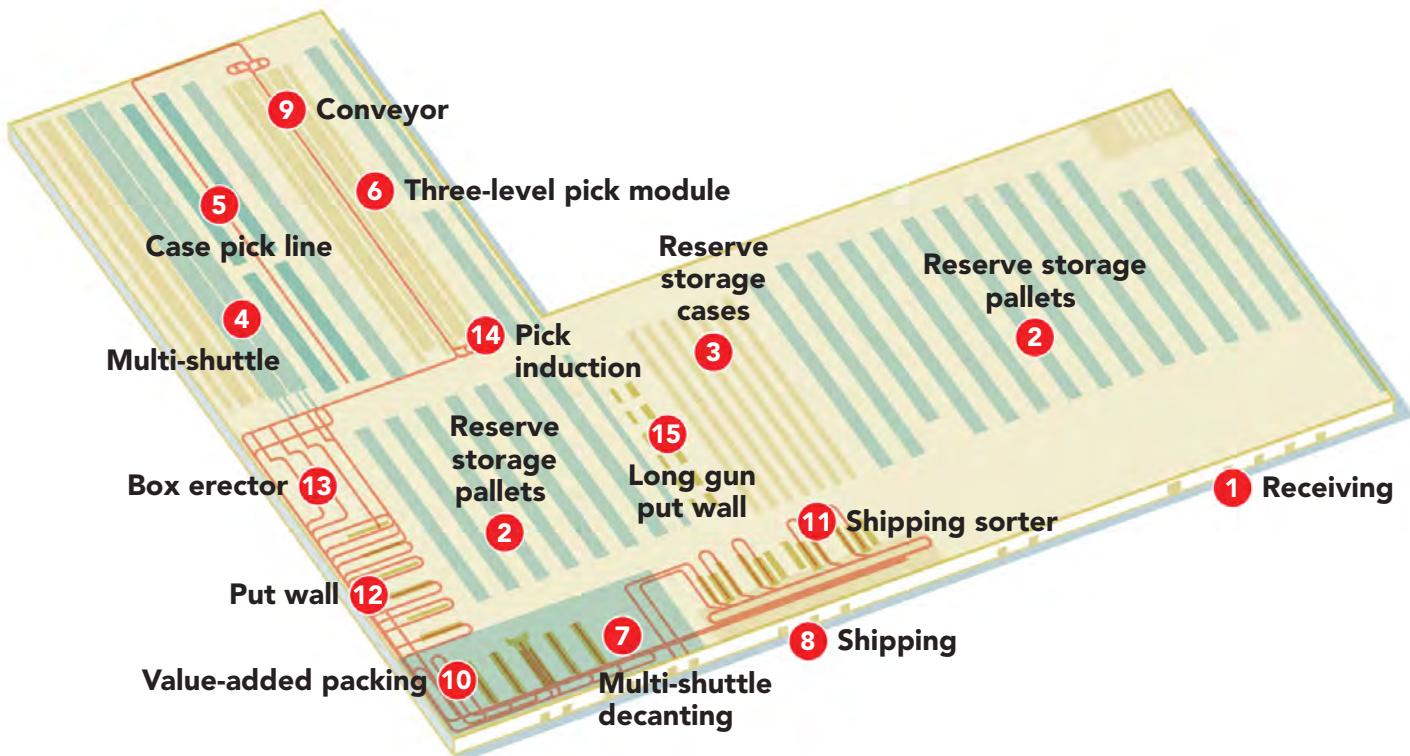
Systems

**PACKAGING SYSTEM:** Sealed Air

**DUNNAGE SYSTEM:** Day-Pak

**BAR CODE LABELS:** ID Label Inc.

is sealed, it is conveyed to one of four shipping sorters (11). Items are then sorted to an LTL shipping lane or to ground or express parcel carriers (8). Cases and containers are loaded into the appropriate truck and the order is closed out in the WMS. □



# TOP 20

# systems suppliers

By Josh Bond,  
Associate Editor

**Building on their success in 2013, the Top 20 sustained growth in 2014 and are on track for continued improvement this year.**

Just two years after it tied Schaefer for first place, Daifuku pulled ahead in 2014, edging out its longtime rival by less than \$50 million. This development is among the results of *Modern's* 18th-annual Top 20 Systems Suppliers list.

No. 1 Daifuku reported \$2.54 billion in revenues, up 3% from 2013, when it acquired Wynright Corp.

Schaefer Systems International's (SSI) \$2.49 billion represents an 8% increase in sales for 2014, thanks to strength in food distribution, e-commerce and retail fulfillment on a global basis. However, president Arnold Heuzen explains that SSI's consolidated results shows a 6% reduction due to a strong dollar and fluctuations in currency exchange rates.

Growth across the list may seem subdued compared to 2013 revenues, when half of the top 10 companies posted nearly 20% year-over-year growth and the Top 20 were up 6.6% overall. But although the list as a whole gained just 2.6% in 2014, industry experts like Norm Saenz, a managing director of St. Onge Co., suggest that the pace of growth remains strong. For instance, St. Onge has been consulting with sev-

eral clients to justify big investments to support planned volume increases. "Many of these larger projects involve new building designs that require more than a year of planning and implementation to go live," Saenz explains. As a result of projects and commitments already in place, Saenz expects that 2015 reported revenues will show even further improvement.

### The view from the top

As Daifuku and Schaefer jockey for the lead, Dematic again secured third place with \$1.6 billion, constituting a 6.7% increase. John Baysore, president and CEO of Dematic North America, attributed the growth to a broadening market of small- and medium-sized businesses aiming to enhance capabilities.

"Companies that produce and distribute products need solutions that optimize their supply chain performance in order to succeed, especially in this era of multi-channel distribution," Baysore says. "Thanks to new scalable intra-logistics solutions and point solutions for smaller and lower volume operations, more companies than ever are embracing the benefits of automation."

**Top 20 worldwide materials handling systems suppliers**

2014 Rank	2013 Rank	Company	Web site	Worldwide 2013 revenue (million USD)	Worldwide 2014 revenue (million USD)	Percent change '13-14	Percent change '12-14	Headquarters
1	2	Daifuku Co., Ltd.	daifuku.com	2,463	2,536	3%	7%	Osaka, Japan
2	1	Schaefer Holding International GmbH	ssi-schaefer.us	2,654	2,487	-6.3%	-3.2%	Neunkirchen, Germany
3	3	Dematic	dematic.us	1,500	1,600	6.7%	23.1%	Atlanta, Ga.
4	4	Murata Machinery, Ltd.	muratec-usa.com	960	1,100	14.6%	4.8%	Kyoto, Japan
5	5	Vanderlande Industries B.V.	vanderlande.com	956	1,051	10%	33.9%	Veghel, The Netherlands
6	6	Mecalux, S.A.	mecalux.com	952	952*	0%	0%	Barcelona, Spain
7	7	Beumer Group GmbH	beumergroup.com	864	902	4.4%	24.9%	Beckum, Germany
8	8	Fives Group	fivesgroup.com	721	721*	0%	16.9%	Paris, France
9	9	Swisslog AG	swisslog.com	658	712	8.2%	4.7%	Buchs, Switzerland
10	11	Intelligrated	intelligrated.com	583	627	7.5%	19.7%	Mason, Ohio
11	10	Knapp AG	knapp.com	620	620*	0%	26.5%	Hart bei Graz, Austria
12	12	Kardex AG	kardex.com	556	556	0%	-11.7%	Zurich, Switzerland
13	13	TGW Logistics Group GmbH	tgw-group.com	525	525*	0%	11%	Wels, Austria
14	14	Grenzebach Maschinenbau GmbH	grenzebach.com	477	477*	0%	35.5%	Hamlar, Germany
15	15	Witron Logistik + Informatik GmbH	witron.com	340	340	0%	13.3%	Parkstein, Germany
16	16	viastore systems	us.viastore.com	207	207*	0%	48.9%	Stuttgart, Germany
17	16	System Group	systemlogistics.com	157	174	10.8%	-15.9%	Fiorano, MO, Italy
18	N/A	Egemin Automation	egeminusa.com	N/A	170	N/A	N/A	Zwijndrecht, Belgium
19	N/A	Bastian Solutions	bastiansolutions.com	N/A	168	N/A	N/A	Indianapolis, Ind.
20	19	Savoye	savoyeinc.com/us	128	138	7.8%	7.8%	Dijon, France

\* 2013 revenues. 2014 revenues were not available by press time. Source: *Modern Materials Handling*

One driver of Dematic's growth has been its maintenance and aftermarket services business—a theme repeated by Vanderlande, Intelligrated and Knapp. To support that growing line of business, Dematic acquired Upturn Solutions in 2013, a leading provider of computerized maintenance management systems (CMMS) for distribution, manufacturing and warehouse environments.

In fourth place, and one of only three companies to grow by 10% or more, is

Murata Machinery, which reported the highest growth rate at 14.6% to close 2014 with \$1.1 billion in revenues. The company acquired Finnish automated materials handling supplier Cimcorp last year, contributing more than \$200 million to the revenue figure.

With \$1.05 billion, Vanderlande Industries is fifth on the list. CEO Govert Hamers says Vanderlande saw growth in e-commerce, postal and parcel markets along with a substantial uptick in the number of service contracts,

which now constitutes 20% of revenue. In addition, Vanderlande closed two acquisitions in 2014: These included Ferdar Automation Technology, a robotics system integrator with experience in the logistics sector, and Smatec GmbH, a provider of sortation technologies, including a pocket sorter and modular bomb bay sorter that can also serve as a tilt-tray sorter.

Given some companies' fiscal years and ongoing preparations for ProMat 2015 in late March, several companies



were unable to report revenues by press time. In these cases, we've held previously reported revenues to preserve each company's relative position on the list. One of those was sixth place finisher Mecalux.

Seventh-place Beumer continues its ascent up the list with 4.4% growth to \$902 million. In early 2014, the sortation specialist acquired Dallas-based Glidepath, a designer, manufacturer and integrator of airport baggage handling systems.

Fives Group (Cinetic Sorting) was not able to report 2014 revenues by press time. At No. 9, Swisslog added 8% to finish 2014 with \$712 million; in November, KUKAAG announced a successful public offer for Swisslog and now owns more than 90% of Swisslog shares.

Intelligrated reached 10th place after growing by 7.5%, or \$44 million thanks to the continued interest in solutions to address Internet retailing and the state of the logistics workforce, according to CEO Chris Cole. "The need for retailers and manufacturers to make the most of capital investments and increase efficiency throughout the supply chain elevates demand for automation, software and aftermarket service, which in turn drives the continuous growth of Intelligrated and the industry," Cole says.

### Growth across the board

Back in 2013, the bottom 10 kept pace with the top of the pack, when each

half grew by more than 6%. Not so in 2014, when the biggest players got bigger while numbers 11 through 20 collectively grew revenue by less than a percent.

The combined value of the list continues a rapid climb. For instance, in 2011, it took just \$100 million to crack to the Top 20 list and \$383 million to make the Top 10. This year, No. 20 (Savoie) posted \$138 million in revenue while No. 10 (Intelligrated) posted \$627 million.

Knapp, number No. 10 on last year's list, was unable to report revenues by press time. Still, Kevin Reader, Knapp's director of business development and marketing, says new orders and a booming aftermarket business are good news for the company. So is a growing focus on software. "Twenty-five percent of Knapp's employees worldwide are focused on software," Reader says. "Whether it's warehouse control and management systems or real-time controls, customers are looking to improve performance and efficiency in their facilities."

In 2013, after completing a restructuring process that began in 2011, Kardex reported revenues of \$556 million, which did not represent an apples-to-apples comparison with the prior year. 2014 revenues were not available.

Despite being unable to report 2014 revenues in time, TGW is again in 13th place, having fluctuated between 12th and 13th place for six consecu-

tive years. After growing 36% in 2013, Grenzebach (formerly reporting as KUKA Systems North America) did not report 2014 revenues.

Following in 15th place, Witron tallied \$340 million. A statement from the company explains that although the number is unchanged from last year's, Witron did see growth that is not reflected due to the exchange rate between the Euro and the dollar.

At 16th place, viastore did not supply 2014 revenues by press time, so its 2013 revenues of \$207 million have been carried over.

No. 17 System Group (System Logistics) achieved the second-highest growth rate of 10.8%, adding \$17 million to close 2014 with \$174 million in revenues. Greg Chaffee, vice president of systems sales and marketing for System Logistics says the company enjoyed growth globally and in North America.

Newcomers Egemin Automation and Bastian Solutions claimed the 18th and 19th spots. Egemin's Michael Coryn, marketing communications manager, notes substantial increases due to large contracts in warehouse automation for deep freeze applications.

Meanwhile, Bastian Solutions made investments in robotic manufacturing including mixed-case, full-layer palletizing and machine tending robotic solutions, according to Aaron Jones, president. It also released an updated software suite as well as a new modular, low-profile conveyor line. Jones says the company expanded into two new U.S. markets organically within Chicago and New Jersey, and also opened an international office in Montreal.

Savoie just missed the list last year, but returned at No. 20 with nearly 8% growth to \$138 million.

This year's Top 20 companies are joined by countless others committed to helping the materials handling industry continue to improve. Next year's list could include newcomers, but it will certainly reflect a focus on increasing value. □

## Making the list

To qualify for *Modern's* Top 20 list, companies must be suppliers of materials handling systems, not just equipment providers. In addition to manufacturing at least two major handling system components, a company must also employ full-time staff that designs, installs and integrates materials handling systems.

These systems include at least two of the following: transportation devices, storage and staging equipment, picking units, sortation systems, information management systems, data capture technologies and other types of handling equipment.

To be considered worldwide suppliers, companies must have a presence in North America and must also be able to report materials handling revenues to *Modern*. (Lockheed Martin, for example, is a systems supplier with a North American presence, but isn't included in our Top 20 list because they can't single out the revenue that comes from materials handling contracts.)

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# 2015 Warehouse/DC Equipment Survey: Smarter funding for the future

Though often characterized by feast or famine, this year's view into warehouse and distribution center spending plans instead strengthens a pattern of deliberate investment. Today, readers are determined to get the most out of every dollar spent.

By Josh Bond, Associate Editor

# W

hen an operation needs an infusion of capital to improve, a “Band-Aid” solution is often a shortsighted way to waste what little money is available. On the other hand, a massive project can feel like a “Hail Mary” attempt to make the most of resources that will probably not come around again for several years.

The results of Peerless Research Group's (PRG) 2015 *State of Warehouse/DC Equipment Survey* suggest that the industry has tired of both paths. Instead, readers tell us that they prefer the middle ground and are steadily investing in targeted solutions that position them for efficiency, productivity and growth.

According to Norm Saenz, managing director of St. Onge Co., a consulting firm specializing implementing solutions in warehouse and distribution operations, the survey results indicate that companies are growing smarter

about getting the most out of every dollar spent. “Many of our clients are also looking to invest in the right level of technology to support steadily increasing volumes,” he says. “The low-hanging fruit has been cut by many warehouse managers, and the next step is to make smart investments.”

About 60% of readers have less than \$250,000 to spend, but a full 25% have more than \$1 million, which Saenz says can enable major changes. Nearly the same amount of readers plan to take their business to a new supplier, and Judd Aschenbrand, director of research for PRG, says that means a lot of opportunity.

“It's a good sign for the vendor community, but it's also a good sign for the end-users who are making it clear that they either need more suppliers and solutions or aren't satisfied with what they have,” Aschenbrand says. “There

## Respondent demographics

In December, Peerless Research Group (PRG) e-mailed survey questionnaires to readers of *Modern Materials Handling* and *Logistics Management*, yielding 448 qualified respondents from manufacturing (46%), warehousing (24%), corporate (22%) and aligned logistics professionals (8%). The median revenue of responding companies is \$90.7 million. Qualified respondents—those managers and personnel involved in the purchase decision process of materials handling solutions—hold influence over an average of 145,313 square feet of warehouse or DC space.



## How is the present state of the economy affecting your spending on materials handling equipment technologies services and solutions?



We are taking a "wait and see" approach, and making only those purchases and investments that are critical to sustaining our ongoing business

We are holding off on investing

We are proceeding with our investments

The economy is having little or no impact on our materials handling spending

### On what?

	2014	2015
Capital equipment	57%	30%
All major capital purchases	47%	50%
Technology/Software	42%	17%
Storage equipment	39%	15%
Fork lifts/Lift trucks	37%	15%

### On what?

	2014	2015
Fork lifts and lift trucks	66%	64%
Materials handling equipment	64%	67%
Technology Information systems (WMS, ERP, etc.)	49%	53%
Conveyors and sortation equipment	40%	42%
Robotics	23%	13%
AGVs	- %	13%

Source: Peerless Research Group (PRG)

are more shifts in this survey than in previous years. Still, the results show that this is a deliberate industry that doesn't make knee-jerk decisions."

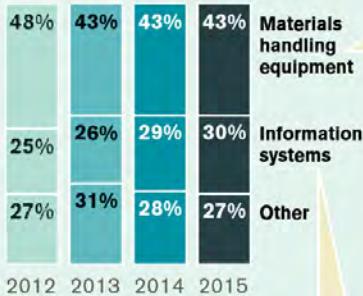
### The yellow light turns green

Throughout the history of this survey, the "wait-and-see" approach has been the most popular one by a large margin. This year, the number of hesitant readers sharply dipped from 43% to 35%, the second 8% drop in a row. It now ties the number who are ready to proceed with investments, which shot to 35% from 27% in 2014 and 19% in 2013.

The survey captures both actual spend on materials handling equipment in the previous year and anticipated spend in the coming one to three years. Readers' projections tend to be accu-



**What percent of your overall spending during the next 12 months will be on...**



Information management systems	2013	2014	2015
Bar coding	- %	- %	54%
ERP	34%	27%	22%
WMS	32%	23%	22%
WCS (Warehouse control systems)	28%	26%	21%
Asset management systems	- %	22%	21%
Voice recognition	15%	15%	10%
TMS	11%	7%	9%
LMS (Labor management systems)	- %	15%	5%

**Which systems and equipment are you likely to evaluate or consider during the next 12 months?**

Materials handling equipment	2013	2014	2015
Lift trucks and accessories	49%	47%	52%
Racks and shelving	47%	49%	46%
Bar coding	31%	33%	40%
Totes, bins, and containers	32%	33%	33%
Packaging including palletizers, pallets, and dunnage	31%	28%	31%
Dock equipment	30%	28%	31%
Mobile and wireless	27%	24%	31%
Conveyors including sortation equipment	22%	26%	25%
Order picking and fulfillment	22%	24%	23%
Controls	15%	18%	23%
Systems solutions	20%	20%	21%
RFID Solutions/Products	20%	19%	21%
Hoists, cranes, and monorails	16%	17%	19%
Power transmission including motors and belts	16%	14%	17%
Automated storage including carousels and vertical lift modules	9%	9%	13%
Mezzanines	10%	8%	9%
3PL services	10%	8%	8%
AGVs	5%	6%	6%

Source: Peerless Research Group (PRG)

rate, if a bit conservative, and this year's forecast suggests more of the same in 2015.

Although more are ready to spend, the average amount has held flat at about \$345,550 for three years. However, Aschenbrand notes that in the same time period, the median spend has jumped nearly \$14,000, indicating more companies moving into higher spending levels.

In the next 12 months, 43% of total planned spending will go toward materials handling equipment. Of that amount, readers are looking to buy lift trucks and accessories (52%), racks and shelving (46%), and totes, bins and containers (33%). Both bar coding (40%) and mobile and wireless solutions (31%) saw significant spikes in reader interest from previous years.

The trend is reflected in new survey questions this year designed to cap-

ture readers' current and future usage of mobile technologies. More than half (57%) are using or have plans to use mobile solutions, which are used by more employees (40%) in more locations (15%)—including outside the four walls (19%).

Bar code scanners (65%) and labels (56%) top the list of devices or technologies either currently in use or planned for the coming year, as well as smart phones or tablets (62%), RFID readers (25%) and tags (22%), and voice technology (13%). "Mobile technology is certainly an emerging phenomenon in the warehouse," Saenz says, "and five years ago it wouldn't have shown up on a survey. This will increase every year going forward."

Planned spending on information technology suggests many businesses have already modernized their platforms and will now focus on execu-

tion in 2015. When asked whether any recent purchases were firsts or constituted a substantial change in historical practices, 40% pointed to their new information technology systems. About a third said recent investments in materials handling equipment had contributed to their new course, and another third said purchases hadn't had much impact on processes.

As readers settle into their new IT systems, the survey highlights an elevated equipment spend and a nearly universal dip in anticipated spend for IT systems. Interest in labor management systems (LMS), which debuted on the survey last year at 15%, fell to 5%.

Because LMS modules are now found in all tiers of warehouse management systems (WMS), and since a number of other new solutions can boost labor visibility, a shifting market could account for the data dip.

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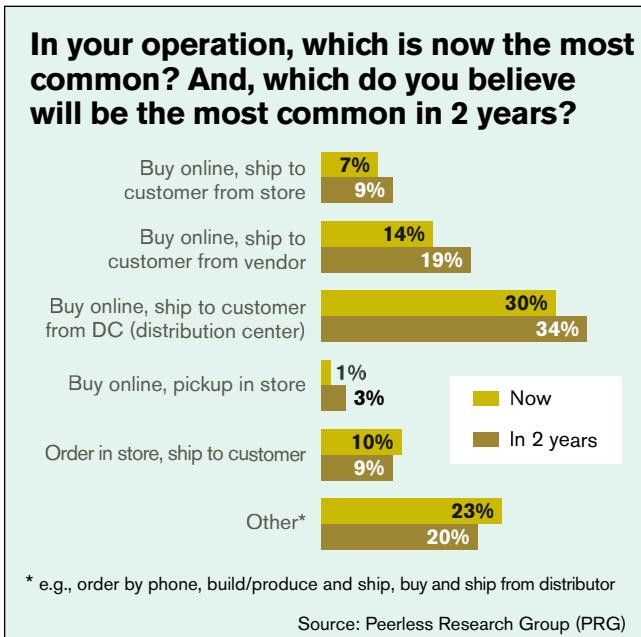
Elsewhere, the survey clearly illustrates a strong focus on labor management, safety and productivity.

**Best practices and their outcomes**

Safety again topped the list of readers' current pressing issues, with 89% of readers ranking it as very important. When asked which issues will become even more important in the next two years, respondents predicted increased emphasis on training (65%), labor availability (57%) and ergonomics (52%).

"Every distribution center needs quality people to run efficiently," Saenz says. "With a growing amount of technology used in the traditional warehouse, finding and keeping the best people is fundamental to the success of the operation."

Among manufacturing operations, labor productivity again scored high, but was leapfrogged this year by lean manufacturing. With 57% of readers currently focused on lean and nearly two thirds expecting the trend to grow in the next two years, the only topic with a faster anticipated rate of growth is just-in-sequence production. Distinct from just-in-time (42% now, 45% in two years), just-in-sequence is now an issue for 29% of readers, and 38% see added pressure coming.



Among warehousing and distribution operations, labor productivity is still toward the top of the list (59% now, 65% in two years), but efforts to lean inventories are also primed for growth (50% now, 58% in two years).

"It's not surprising to see a push into measuring performance and lean principles over the next two years," says Saenz. "It seems more surprising that it's less important right now. Tracking and measuring performance is the sure way to discover productivity-increasing opportunities." He also notes that reader interest in outsourcing, which concerns one in 10 readers now, but could become a focus for

one in five in coming years.

This year's survey included a new question geared specifically toward capturing reader interest in outsourcing the maintenance of their automated materials handling systems. Slightly more than half maintain such equipment in-house, and only 12% exclusively outsource. Another 35% employ a mix of the two. According to readers, vendors and maintenance suppliers are chiefly focused on maintenance (49%), upkeep/upgrades (46%), consulting (43%), and data analysis (17%).

Saenz suggests that more and more companies might be looking to in-source materials handling equipment maintenance since it can be less costly. "But that means full-time staff, certain facilities, and technical know-how," he says. "If it is only lift trucks, it could be managed in-house, but if the system includes conveyors, sorters, automated storage and retrieval systems, it might be safer for some to outsource."

**Automation and robotics**

In addition to concerns and interest in available solutions, this year's survey sought to identify those areas where robotics and automatic guided vehicles (AGV) have already penetrated

**2014's strong economic performance expected to continue in 2015**

The second half of 2014 saw strong performance among MHI member companies, with momentum projected to continue through 2015, according to an economic sentiment survey prepared by ProMat sponsor MHI.

Many end users are turning to automation to improve their bottom lines and to address the skilled labor shortage and aging workforce, said MHI CEO George Prest.

"The adoption speed of supply chain innovations—coupled with rising consumer expectations for anytime, anywhere service—has stressed traditional supply chains to near-breaking points," added Prest. "End users who do not adapt will struggle to remain competitive and deliver orders that are accurate and on-time."

For this reason, 45% of respondents said they expect sales/new orders to grow by 10% to 20% in 2015, for a total weighted average of 9.2% growth over 2014. To keep pace with sales, staffing will grow at an equivalent rate.

Additionally, the improved economy will bolster MHI members' capital goods purchases by an average of 8.1% over 2014, with strategic investments in new plants (20%), equipment (30%), information (25%) and technology (25%) topping their shopping lists.

The survey included MHI's leading members from both the MHI Board of Governors and Roundtable Advisory Committee.

—Sara Pearson Specter



materials handling applications.

According to results, one in 10 readers currently uses an AGV for tasks including transportation (41%), storage (38%), bin picking (23%), truck loading (20%) and unloading (14%), and order fulfillment (20%). About 18% use robotics for functions like palletizing (42%), pick and place or part transfer (36%), packing/packaging (36%), depalletizing (19%), and unpacking (12%).

In each of these applications, AGVs and robots must justify themselves, Saenz says, and there are many semi-automated solutions that might provide the required throughput at a much lower investment than a fully automated one. "Automation can also be a less flexible solution," he says, "and with uncertainty still in the air, companies are looking to make smart investments that keep their options open."

### E-commerce and fulfillment

In an effort to illustrate the impact of the e-commerce revolution on equipment purchases, this year's survey asked which capabilities are now most common and which might be two years from now.

Three in 10 currently support "buy online, ship to customer from DC," and 34% expect it will be common in two years. Readers expect fewer consumers will care to buy in the store and then make a second trip for pickup. Although 15% of companies now offer such services, only 6% expect it to continue in the future. "Order in store, ship to customer," is in practice among 10% of respondents, but could also fall

somewhat in coming years, according to Saenz.

Those capabilities expected to grow include "buy online, ship from vendor" (14% to 19%), "buy online, ship from store" (7% to 9%) and "buy online, pick up in store" (1% to 3%).

All of these omni-channel pathways also impact where functions are performed. When asked whether a company's e-commerce activity has prompted or will prompt changes,

readers indicated e-commerce has led them to perform distribution functions in a manufacturing environment (46%) and perform manufacturing functions in a distribution environment (36%).

Packaging and fulfillment might occur at the point of manufacture (47%), warehouse (39%), DC (22%), fulfillment center (11%), retail store (4%) or is outsourced (3%).

Saenz says he's surprised to hear many manufacturers would perform e-commerce distribution in their plants. "The large manufacturing companies that I've worked with are fulfilling e-commerce either using a 3PL, a separately operated facility, or within an existing distribution center," he says. "I am less surprised that many distribution centers are required to perform some assembly and or manufacturing to finalize an e-commerce request." □



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# 7 ways 3PLs support warehousing and distribution

Initially focused on the transportation component of the supply chain, the modern day 3PL offers a range of services to support warehousing and distribution.

By Bridget McCrea, Contributing Editor

**A**s the companies that manage the logistics operations of a variety of facilities, third-party logistics providers, or 3PLs, have come a long way since their inception in the 1970s. In response to demand, for example, 3PLs expanded their services to not only include end-to-end logistics coordination and management, but also technology integration (such as transportation management systems and warehouse management systems), global shipping functions as well as warehousing/distribution support.

As its position in the supply chain continues to evolve, the modern day 3PL has put forth an even bigger effort to meet its customers' needs on various levels. Here are seven reasons that companies are turning to 3PLs in the warehouse and distribution space.

**1 Crossdocking imported goods** Whether their operations are domestic in nature or based overseas, companies that import goods typically need crossdocking support to help manage and direct those goods. Defined as the unloading of materials from an incoming vehicle and then loading the materials directly into outbound vehicles with no "storage time" in between, crossdocking allows companies to receive goods, segregate them by purchase order, destination, SKU or store location, and then distribute the items to the final destination without having to ever store the goods.

Kyle Oslos, senior director of logistics at APL Logistics, says companies with global supply chains are particularly well positioned to benefit from





this offering. “If your supply chain is primarily overseas in countries like China and India, the breaking out of the shipments into separate POs and destinations doesn’t happen at the origin,” he says. “A 3PL can provide the crossdocking functionality that allows companies to bring those goods in without having to manage, sort and even touch them.”

## **2** Access to IT infrastructure

Companies that want to be able to leverage all of the features of a warehouse management system (WMS), but don’t want to have to invest in a full-blown technology platform, can tap into their 3PLs—many of which offer such integrations. Seko Logistics, for example, owns a proprietary WMS that integrates with companies’ existing enterprise resource planning (ERP) or transportation management systems (TMS).

“We’re agnostic in technology,” says Brian Bourke, vice president of marketing at Seko, “so we will just figure out a way to connect to a customer’s existing systems.” This is a particularly important point, he says, because once stretched outside of a company’s four walls, technology systems aren’t always

**As its position in the supply chain continues to evolve, the modern day 3PL has put forth an even bigger effort to meet its customers’ needs on various levels.**

easy to integrate with other solutions. “We get involved with connecting the pieces together,” he adds, “to give customers visibility all the way from their vendors to the end customers.”

Calling IT infrastructure a “significant expense” for companies, Alan Amling, vice president of global logistics and distribution marketing for UPS, says he’s seeing more companies leveraging their 3PLs’ existing platforms. “When you can utilize a WMS that a 3PL already has in place,” he says, “that’s one less thing that you need to worry about and invest in.”

## **3** Omni-channel fulfillment support

With all eyes focused on omni-channel (i.e., creating a seamless shopping experience for customers across all distribution channels) right now, it just makes sense that logistics specialists like 3PLs would step up to the plate and support omni-channel efforts.

“When a retailer moves from 5% e-commerce to 80% to 90% e-commerce, the fulfillment side shifts quite a bit,” says Bourke. Consider the com-

pany that has to comply with the big box retailer’s standards and that must make sure all items are packed, labeled and shipped correctly.

The same company may also be sending items directly to consumers—an exercise that requires return labels, printed catalogs, and/or even handwritten notes to be included with the orders. “These steps have to be taken during the fulfillment stage,” says Bourke, “and they are just some of the warehouse/distribution services that a 3PL can provide.”

## **4** Strategic workforce management

The fact that 3PLs aren’t historically known for helping warehouses and distribution centers manage their workforce hasn’t stopped some of these providers from providing overall strategic workforce management. “3PLs are helping warehouses and distribution centers get a handle on issues like labor and workforce optimization,” says Todd Johnson, global vice president of the 3PL global business unit for JDA. Driven primarily by the post-recession labor shortage that’s

currently challenging some companies, this value-added service helps companies focus on the utilization and development of their staffs. “Labor is one of the largest cost drivers in the warehouse,” says Johnson, “and we’re definitely seeing 3PLs helping to take the cost out of the warehouse through the use of advanced labor planning solutions.”

### 5 Last-mile configurations and deliveries

In response to demands for fewer distribution points across the supply chain, 3PLs are offering value-added DC activities that help companies cut down on the number of nodes within their own supply chains. “We’re using DC points to apply those value-added services to products—mostly in the interest of velocity and customer responsiveness,” says Carl Fowler, vice president of sales and engineering for Menlo Logistics. Such services help warehouses and distribution centers address their “last mile” distribution challenges. Defining the last mile as the final point of configuration to final delivery to the customer, Fowler says 3PLs are installing finishing touches on products, handling final configurations, and even embroidering team hats for events like the Super Bowl. “It’s about delaying configuration until the last ‘touch,’” he says, “and then addressing the last mile delivery component, which can include installation, coding, quality checks, and/or final white glove-style delivery service.”

### 6 Industry-specific supply chain oversight

In light of the increased scrutiny being paid to the pharmaceutical space by the U.S. government (for example, the Compounding Quality Act and the Drug Supply Chain Security Act will require the FDA to develop a national track-and-trace system that pharma manufacturers must use when introducing products into the supply chain), Johnson expects more 3PLs to get into the track-and-trace and supply chain



**3PLs are offering value-added DC activities that help companies cut down on the number of nodes within their own supply chains.**

visibility services businesses.

“Some of these developments are really driving a need for 3PLs that can offer these types of services and technology,” says Johnson. “That would allow the pharmaceutical companies to quickly adapt to emerging legislations while gaining better visibility control in the space.”

### 7 Final-stage kitting and packaging

Third-party logistics providers offer up a host of transportation and warehousing services, but Amling says the real magic happens when those providers go beyond standard fulfillment—storing, picking, packing and shipping—with value-added services like final-stage kitting and packaging. Using athletic bandages as an example, Amling says that while Walmart may want the items assembled into a five-pack, Walgreens might request a “buy two, one free” offer.

“All of these different retailers want everything customized to their own preferences,” Amling says. “You have to be able to predict demand across the various retailers and handle the different, requested configurations upstream—when you’re doing the manufacturing and packing.” Where the 3PL comes in is by providing kitting and packaging. This effectively allows the warehouses and distribution centers to postpone any type of predicting or decision-making around specific order volumes. “The company sends them to us in bulk and, as the orders come in,” he says, “we pick and pack them according to the retailer’s requirements.”

### More services on the horizon

As companies outsource more warehouse and distribution functions to third parties, and as more 3PLs step up to the plate and incorporate more services and solutions into their offerings, expect to see even more symbiotic relationships form between 3PLs and their customers. “We’re definitely seeing an increased interest from companies that want to use 3PLs that can expand outside of the transportation area,” says Johnson, “although right now, the majority of 3PL services are still focused on the core transportation and logistics areas.”

Johnson sees a shift coming on the horizon, however, with more 3PLs providing services around whole inventory and order visibility. “From a consumer perspective, we expect to be able to have full visibility to our orders,” Johnson says. “From the moment we place the order, through the transit process, and right up until it reaches our doorstep. That’s the expectation.” To meet that expectation, Johnson adds that warehouses and distribution centers need the kind of technology and solutions that many 3PLs already possess and provide. □

### Companies mentioned in this article

- APL Logistics
- JDA
- Menlo Logistics
- Seko Logistics
- UPS

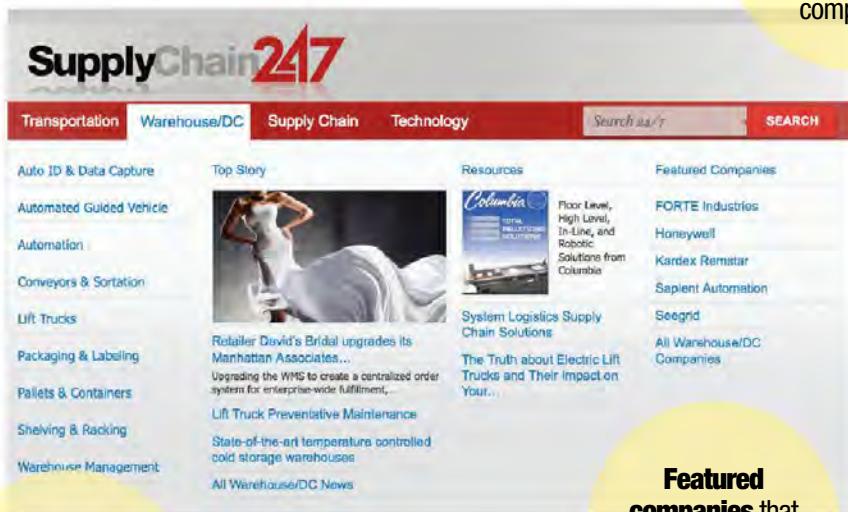
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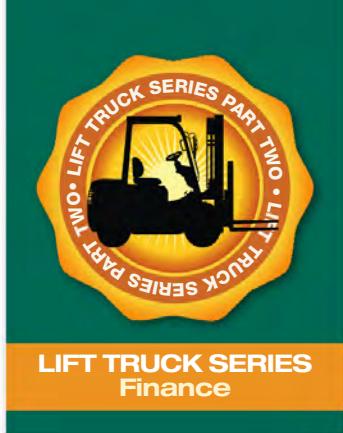


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# Flexible finance for your fleet

Fleet costs don't stop at the purchase price, and expanded collaboration between fleet managers, dealers and finance partners is changing the way fleet costs are managed over time.

By Josh Bond, Associate Editor



Businesses, applications and equipment needs change over time, and lease agreements should support rather than hinder those changes.

Everyone likes saving money, but when it comes to lift truck fleet management there's no shortage of stories about those who attempted to be a penny wise only to end up with pounds of trouble. Lease agreements that look good at first can result in big costs at the end of the term. The practice of holding on to spare or aging equipment is handy dur-



ing peaks, but saps resources the rest of the time. Fleet waste at any given time often comes down to the number of lift trucks in that fleet. Too many and unnecessary expenses add up. Too few and production suffers.

The fear of not having enough equipment to get the job done has contributed to a longstanding habit of managing too many lift trucks. Companies have been happy to pay a premium to ensure a piece of equipment is always on hand when needed, but you can right-size a fleet without wasting money or compromising productivity.

“I would estimate that 75% of companies could probably stand to reduce the size of their fleet,” says Derek Knapp, national accounts manager for Kenco Fleet Services. “They might be able to get rid of old equipment, they might simply have too many units, or they might be paying for rentals that are just sitting around. A lot of companies could easily downsize by 10% to 15% by diving into the information they already have.”

Unfortunately, information is often the last thing a manager considers when he senses an equipment shortage. “They have a certain number of lift trucks and operators because they based the decision to add them on a manager who came to procurement and said ‘I need more,’” says Jim Gaskell, director of Global Insite Products for Crown

Equipment. “It’s the tyranny of the urgent.”

The urgency to add equipment often overlooks the fact that many lift trucks are actually used only 40% of the time, Gaskell says, or that three units in a fleet of 10 might be used only a few minutes per day. “Fifteen years ago, if people looked busy, the manager figured they probably were,” he says. “Now, we can much more readily assess the productivity of a lift truck and its operator. Then we can determine the optimal quantity, usage and cost of that equipment.”

### Collaboration

Data can help monitor a lift truck’s health over time, but Bill Buckhout, director of leasing and re-marketing for Hyster Company, says there is still some art to pairing the right equipment with the right application.

“Although data is great for making operational decisions, it doesn’t do a good job of picturing what the customer is trying to accomplish,” he says. “There needs to be synergy between the proper truck and the proper specifications. You can buy a less expensive truck and pay many times over for that choice if it doesn’t match the application.”

Ideally, there is a close correlation between each lift truck’s utilization data and the structure of a lease, purchase or rental agreement. However, according to Bob McGowan, fleet operations manager for Yale Materials Handling Corp., “getting procurement on the same page with operations is a huge challenge.”

McGowan recommends an ongoing conversation between the two camps, where the procurement side outlines its challenge to control up front equipment costs and operations works to explain the impacts of those decisions. In recent years, the focus has often swung from one side to the other, as efforts to cut costs zeroed in on initial savings or total cost of ownership, which accounts for the equipment price as well as maintenance and operator expenses over the life of the equipment.

“Before the economic downturn, there was a shift in the industry as it began to focus on total cost of ownership,” McGowan recalls. “Then when the economy turned, many decided to get leaner, leverage their spend, acquire only the bare minimum equipment and lean on equipment that much harder. For a while the industry was focused on driving cost out of the acquisition, but now it’s coming back around to a wider perspective.”

The total cost of ownership is useful in establishing a long view of equipment usage patterns, McGowan suggests. This can prevent blanket 60-month lease terms for equipment that could end up with either 3,000 hours or 13,000 hours of use by the end of that term. But according to Tim Combs, executive vice president of sales and marketing for The Raymond Corp., granularity is the real key to controlling costs.

“One of most valuable metrics that could be monitored is the cost per hour to operate a lift truck,” Combs says. “You could break that down by simply dividing the monthly payment by the hours used that month, but unless you look at those hours and dig a bit deeper into the maintenance spend and the avoidable cost per hour, the monthly cost can be misleading.”

Combs suggests fleet managers take a closer look at the payment structures for each piece of equipment. The most costly way to deploy a lift truck is the monthly rental, he

explains, which should be used only for a few days, weeks or months as needed. “But you’d be surprised how many keep it for 18 months,” Combs says. The next most expensive approach is the short-term rental, which often includes planned maintenance and repairs and is ideal for seasonal use. Then there’s the long-term rental with a monthly rate that includes long-term maintenance and a service plan, maybe for 36 months.

The standard leasing program should result in a slightly lower cost per month than a long-term rental, but there’s a longer commitment period of anywhere from 48 to 84 months. Of course the cheapest in terms of acquisition costs is to simply buy a piece of equipment, but this can result in the greatest total costs without an understanding of the resources required throughout the equipment’s life.

Whatever the plan at the outset, it is important to be prepared for change. Detailed data can help determine initial fleet composition, but data’s greatest value is to inform adjustments to that fleet over time. “Say a customer has five pallet jacks, eight reach trucks and four counterbalanced,” Combs says. “Then you get down the road, the customer base changes and maybe they have too many reach trucks and not enough pallet jacks. They can easily make that switch.”

### Charting a flexible course

No two applications are the same, even in the same facility, so there is no reason the cost structure for a given piece of equipment should be identical to another. Each unit’s use will also change over time, and therefore its economic life will be consumed at different rates.

In very harsh applications like a meat packing plant, it might make sense to replace a lift truck in six months and transfer it to a less grueling application. That transfer might occur within an organization’s fleet or the dealer might resell the equipment.

Combs says each lift truck should



**No two pieces of equipment will have identical utilization, and their costs should reflect any differences.**

have three lives. The initial user should use the equipment as close to full time as possible, deplete the bulk of the lift truck’s economic life and retire it before cost outweighs value. Equipment could then move to a short-term rental fleet for seasonal use, where it might be needed 75% to 80% of the time. A couple of years later, the dealer might refurbish as needed and sell the used lift truck to someone who only uses it two or three hours per day.

Whatever a customer’s needs, Buckhout emphasizes that leasing arrangements are becoming more flexible and should not limit the ability to right size a fleet as conditions change. “The first thing we start with is the basic principle that the customer needs to rotate the fleet, and that starts with defining the correct lease term that will create a natural replacement cycle,” he says. “But the lift truck operator and its maintenance are the real costs. The cost of the lift truck itself is less impactful on the purchase decision than it

ever was before, especially if you can prove maintenance costs will go down.”

Having recognized the importance of maintenance over time, some customers have opted for single-payment leases. With cash on hand, these customers see value in an outright purchase to minimize interest costs and keep equipment off the books. But the idea of being left to maintain the equipment alone is less appealing. In this case, the customer pays for the entire payment stream up front, but still has the replacement schedule of a typical operating lease.

“In five years, you give back the lift truck and there are no end-of-lease hassles,” Buckhout explains. “And because the dealer is invested in preserving the residual at the end of that term, the lease structure can be a way to be sure the dealer has a little more skin in the game.”

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stake in the condition of a lift truck, lease terms are commonly bundled with full maintenance agreements. Gearoid Hogan, vice president of sales and marketing for the Northeast at Combilift, sees the trend as customers increasingly move toward these agreements.

“Whether a two- or five-year lease, they’re looking for certainty in their total cost of ownership over that time,” Hogan says. “All of us are working on a preventative maintenance program and a closer relationship with the customer, as opposed to a reactive approach.”

Still, if a machine is down for whatever reason, Hogan says even the protection of full maintenance coverage cannot always prevent severe impacts to the business. With enough discipline, however, the maintenance agreement might go a step further, says Brian

Markison, director of North American sales for UniCarriers Americas.

“Many full maintenance agreements exclude odds and ends, but customers are pushing for complete maintenance coverage, including tires and even minor abuse,” Markison says. “There are even some requests for year-end reimbursement of any unspent portion of monthly payments.”

The idea of getting money back at the end of a lease might sound foreign, Crown’s Gaskell says, but maintenance is essential to a cost-effective lease of any kind. For those who have been burned on leasing, he suggests, it’s often about the difference between the front and back end of the lease. “A customer might get really excited about a low payment initially, only to be less happy at the end of the lease. OEMs

**Disciplined data collection can inform fleet decisions, but there is still an art to pairing equipment with applications.**

can load up the costs on the front or back of the deal, and I’ve heard horror stories where return costs were huge. It’s the same with maintenance, where a supplier quotes \$1 per hour for maintenance, knowing they will end up charging you \$2 per hour after they account for misuse and abuse.”

Then again, if business is surprisingly good and equipment ends up overused by the end of the term, additional costs might not be a bad thing. “Why decouple the benefits of extra volume from the cost for equipment?” Gaskell asks. “Maintenance data, telematics data, operator and vehicle use should correlate with cases moved. You might have paid a premium on the overuse of equipment, but you still made a profit on that additional volume.”

Markison suggests this sort of correlation indicates that fleet management and finance have entered a third phase. The first phase centered on eliminating units with low utilization, he says. In the second phase, after the fleet is right-sized, it’s about making sure the equipment is down for the least amount of time.

“This is key, since the cost of stopping production can be orders of magnitude larger than even the biggest repair costs,” Markison says. “We see contracts where customers expect no lift truck to be down for more than four hours.”

The third phase, Markison says, involves a much broader consideration of a fleet’s impact on operating costs. This evolution is also reflected in the approach of large firms like DLL, which provides asset financing and leasing to equipment manufacturers, dealers and distributors around the world. DLL reported \$9.7 billion in new business volume in 2013, and has twice the market share of its nearest competitor. The firm recently formalized the creation of its Global Fleet



Both end-users and service providers have more incentive and more tools than ever to control costs over the life of a lift truck.

Customer Account team, which focuses on the entire fleet management cycle from procurement to solutions for effectively managing a fleet.

Theo Rennenberg is a fleet asset manager at DLL and heads up the newly formed group. He says its creation follows several years of the company's focus on not only originating new business, but continuing to help customers manage fleets after the sale.

"Having collected the data to clearly illustrate optimal decisions, the next horizon is getting the customer out of the whole decision tree by having equipment suppliers and their service organizations deliver the usage of the equipment," Rennenberg says. "As service delivery organizations better organize and predict life cycles for equipment, and even individual components, this data can be used to best model total cost of ownership and deliver usage-based contracts on a regular basis."

Customers are pushing for telemetry-driven, usage-based leases, Rennenberg adds, where the contract term fluctuates with the hours of usage. "This arrangement should eliminate overtime charges due to over-utilization, or over-payment due to under-utilization." □

### Companies mentioned in this article

- Combilift
- Crown Equipment
- De Lage Landen (DLL)
- Hyster Company
- Kenco Fleet Services
- The Raymond Corp.
- UniCarriers Americas Corp.
- Yale Materials Handling Corp.



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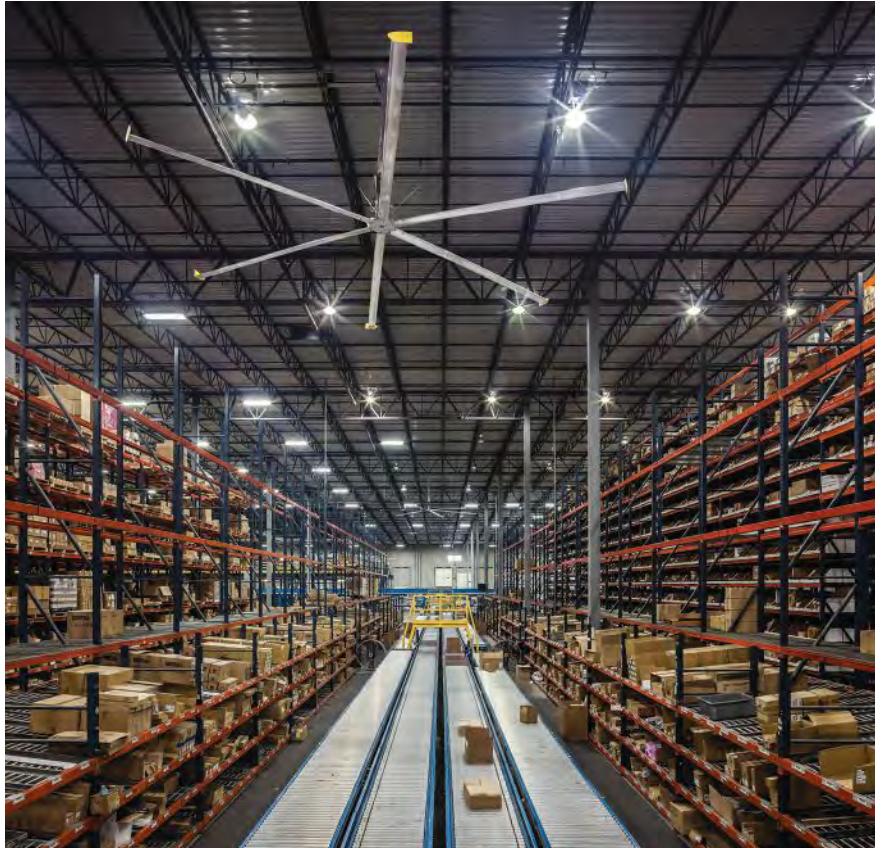
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By **Josh Bond**,  
Associate Editor

# Fans transform humid Nashville warehouse

*Improved airflow boosts employee comfort while slashing energy costs.*



It's hard to keep a 200,000-square-foot warehouse a comfortable temperature, and copier and printer manufacturer Ricoh USA's parts center was no exception. The Nashville facility's east-west orientation captured heat from direct sunlight in the mornings and evenings, compounding the sweltering humidity that bogged down workers in the summer. In the winter, heat from the overhead units rose to the ceiling, failing to warm the employees working at the ground level. After installing a series of fans throughout the facility, the company cut energy prices while improving employee comfort.

Facility managers knew air conditioning wouldn't be cost-effective in a space with 40-foot ceilings and two massive dock doors that constantly open and close. They installed several standard overhead fans and two roof ventilation units, but the results were disappointing. The fans created so little airflow that the ventilators

couldn't draw the hottest air out of the building.

Ricoh installed 10 new fans, all 24 feet (Big Ass Fans, [bigassfans.com](http://bigassfans.com)): three on the receiving dock, three on the shipping dock and four above the central warehouse floor. In summer, increased air movement makes employees feel up to 10 degrees cooler, and the enhanced circulation pushes hot air out of the facility through the ceiling ventilators. In winter, the fans are slowed to push hot air trapped at the ceiling down to floor level, keeping employees warm. Throughout the year, the fans create energy savings of up to 30%.

"It was a no-brainer. The sales team understood the problems we faced and worked hard to find the best placement for our fans," says Jeff Robataille, director of field operations for Ricoh. "Everyone loves the fans, and they always comment on them. The fans we had before couldn't compare, and we're just thrilled with the difference the new ones have made."

By **Josh Bond**,  
Associate Editor

# Temporary insulated wall solves problem of unused warehouse space



*Warehouse creates seasonal cold storage capabilities to serve needs of owner and tenant.*

**K**endal Floral Supply is a leading supplier and distributor of fresh cut flowers in the western United States. The company sought to create a seasonal revenue opportunity with its 6,000 square feet of unused warehouse space. Managers knew they needed a flexible, insulated wall solution to ensure temperature control and increase or decrease the cold storage area as needed.

Seasonality of inventory is an ongoing space challenge for Kendal Floral. The team began evaluating wall solutions that could be installed and taken down quickly to effectively partition space and control temperature. The new walls (Randall Manufacturing, [randallmfg.com](http://randallmfg.com)) enable the facility

to rapidly convert space to store flowers during busy seasons like Valentine’s Day or Mother’s Day.

“We knew that if we could create a seasonal cold storage area out of the 6,000 square feet, it would increase our success of finding a seasonal tenant,” says Roberto Ante, operation manager at Kendal Floral.

When Driscoll’s Berries was searching for a seasonal distribution center during its busy summer months, Kendal Floral was able to accommodate its need for a temperature- and humidity-controlled space. In a matter of days, the space was ready for its new tenant and started to generate revenue. At the end of the season, the wall is taken down and stored.

By Josh Bond,  
Associate Editor

# Multi-facility deployment addresses complex lighting needs

*Bulk warehouse facilities achieve better lighting with 50% fewer fixtures and big energy savings.*



Headquartered in Eugene, Ore., SnoTemp Cold Storage is a family-owned warehousing and distribution company with more than 15 million cubic feet of climate-controlled space under management. Following a series of energy efficiency upgrades, the company's warehouses now consume 5 million fewer kilowatt hours (kWh) of electricity annually.

Lighting improvements (Digital Lumens, digital-lumens.com) were a major contributor to the savings, according to Jason Lafferty, vice president and general manager for SnoTemp. Lafferty says work teams love it for the natural quality of light, even in areas of the facility that had previously been very hard to illuminate. Maintenance teams can also modify lighting behaviors without touching a fixture and currently handle fewer disruptive maintenance tasks.

“And management likes it for its ability to collect, analyze and document facility-wide energy use, occupancy patterns and savings down to the individual fixture level,” Lafferty says. “The lighting deployment was a significant win for our organization.”

The intelligent LED lighting system connects the Eugene and Albany facilities, comprised of one new-build and two retrofit installations. The com-

pany can now save in excess of 1 million kWh annually in lighting-related energy usage and has reduced heat-related energy loads on refrigeration systems by more than 500,000 kWh annually. By eliminating re-lamping and re-ballasting events, SnoTemp has also saved more than \$12,000 in annual maintenance costs.

With wide-open center aisles and stacked bulk storage spaces along the perimeter—sometimes 60 feet away from the center line—maintaining appropriate light levels was difficult. With traditional HID, HIF or HPS lighting, illuminating the vertical stacks forced management to significantly over-light surrounding spaces. The new lights enable the rotation of light bars within each fixture to direct lighting to critical work surfaces. Lights can also turn off or dim when no one is present and automatically inform a meter technician if a fault results in abnormal energy use.

# Lighting targets maintenance costs in high-ceiling facility

*Including an occupancy sensor, the new system also saves more than 1 million kWh annually.*



Located in the heart of apple country in Selah, Wash., Tree Top is a leading producer of apple juice and cider as well as a supplier of fruit-based products and ingredients for the world's leading food and beverage manufacturers. By upgrading its lighting fixtures, the company dramatically lowered maintenance costs and energy usage.

Tree Top, an agricultural cooperative, is owned by more than 1,000 apple and pear growers in the Pacific Northwest and has eight processing locations in Washington, Oregon and California. The company's vast operation in Selah spans several buildings, including a 160,000-square-foot storage facility known as the Comet Building. The building's interior was lit with 400-watt metal halide and T5 fixtures that required expensive labor and downtime in productivity to maintain because of the facility's high ceilings.

"The old fixtures just became too inefficient and difficult to maintain," says Doug Owens, building owner. "We couldn't even find bulbs for them anymore. With the new LEDs, the space is brighter. Our customer is very happy with the new lighting system."

In a one-to-one replacement, 100 of the new 160-watt LED fixtures (MaxLite, [maxlite.com](http://maxlite.com)) were installed. Owens sought to install a lighting solution that would reduce maintenance expenses while increasing light quality. He chose a linear high-bay solution for its price-point and lumen package. In addition to producing the foot-candles necessary for the space, the lighting features an occupancy sensor control for a facility that is in continuous operation.

The new LED fixtures will save the Comet Building's owner and tenant more than 1,205,000 kWh and \$114,00 in energy and maintenance costs throughout their 50,000-hour lifetime. □



# YMS takes FLIGHT

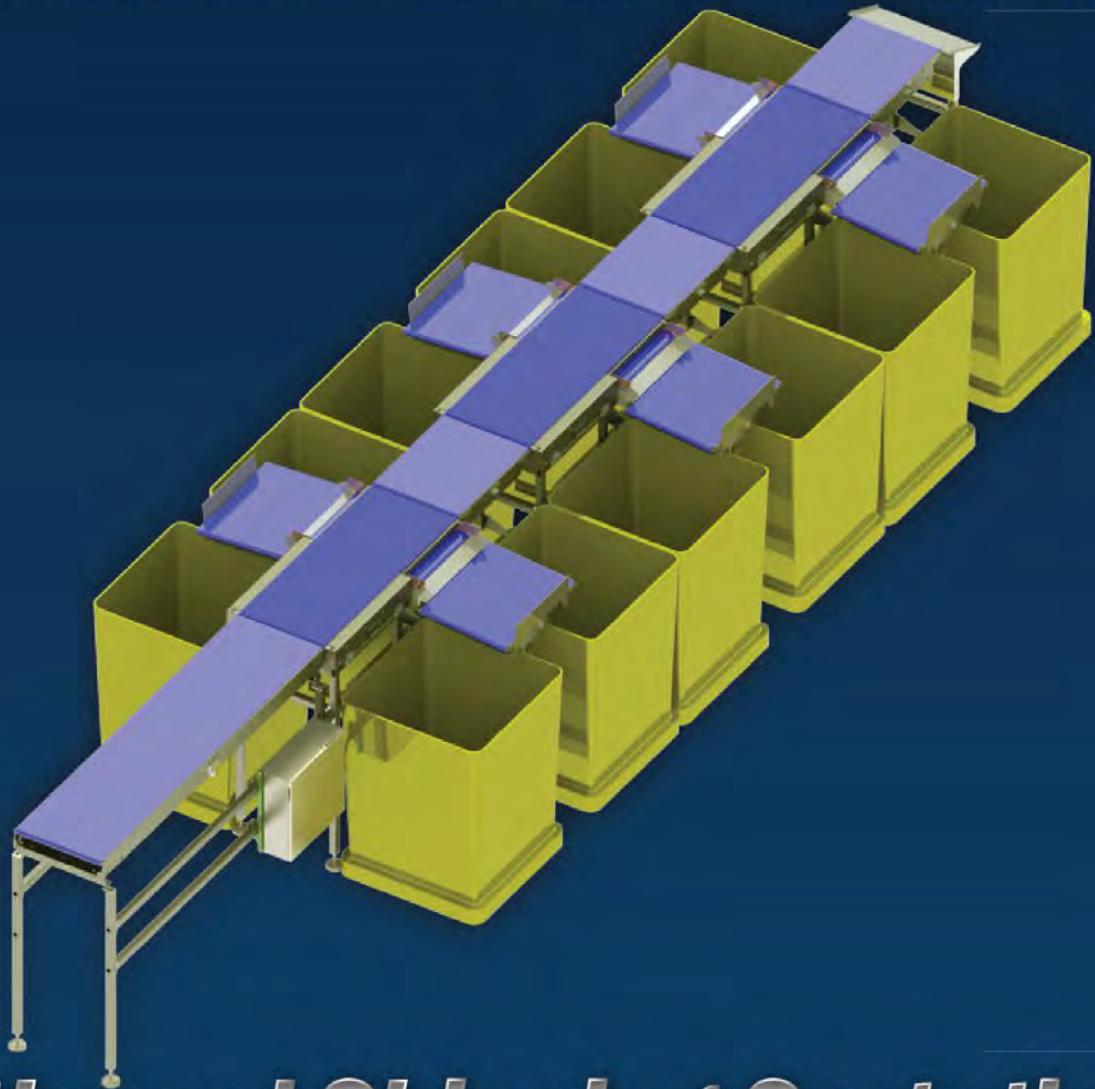
By Bridget McCrea, Contributing Editor

**Yard management systems (YMS) suppliers are rolling out new capabilities and incorporating advanced technology that helps logistics operations gain better visibility over exactly what's going on in their yards at any time.**

**A**ny supply chain professional who is currently managing the assets out in the yard using clipboards, two-way radios, or mobile phones probably can't conceive of this management task being enabled by flying drones. But thanks to advances in technology, unmanned aerial vehicles (UAVs) flying around a yard either autonomously or with the help of a remote control are coming sooner than one might think.

Just ask the folks at PINC, the software vendor that recently introduced PINC Air, an autonomous real-time location system (RTLS) aerial robot that can survey large areas of densely packed assets for the purposes of inventory

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reconciliation and can pinpoint where certain inventory is located.

PINC Air is autonomous in that it takes off and lands from the same location automatically, with obstructions in its flight path automatically detected and avoided. The drones use PINC's RTLS capabilities and upload the RTLS and video data over wi-fi upon return to their ground stations.

Clint Reiser, research analyst with ARC Advisory Group, sees potential in combining drones with the management of yard-based assets, particularly for those that have expansive yard operations. "Basically, we're talking about the development of low-cost drones that serve as 'readers' in performing tours of the yard to confirm where the assets are and that those assets are, in fact, out in the yard," he says.

Secondarily, Reiser says that the same equipment can be used to track assets in heavy manufacturing facilities—where high-value assets are located outside of the four walls of the plant—and in lay-down yards where equipment is literally "thrown in piles over several acres of land." In each of these applications, the UAVs serve as

a second set of eyes for operations that want to gain better visibility over the activities taking place in, and the equipment located in, their yards.

Of course, yard management systems (YMS) don't have to be overly technical and situated in an aerial position to be effective and valuable. Over the next few pages we'll explore current YMS adoption, show how these systems are being put to work in the yard, and hear from a company that has experienced positive results over the five-year span that it's been using YMS.

### Tracking valuable yard assets

As the software systems that track the movement of trucks, trailers and other assets in the yard of a warehouse, distribution center or manufacturing facility, YMS fills in a critical gap left open by traditional transportation management systems (TMS) and warehouse management systems (WMS).

Where the latter oversees the activities within the four walls of the warehouse, and the former takes over when trucks pull out of the front gate, YMS provides visibility over shipments,

inventory and even security out in the yard. The applications are offered as stand-alone entities from software vendors like PINC, come as part of larger WMS or TMS applications, or are integrated into enterprise resource planning (ERP) systems.

In addition to PINC, companies like Zebra Technologies, C3 Solutions and Exotrac all offer their stand-alone YMS, while WMS providers like Manhattan Associates, HighJump, SAP and Oracle have built YMS functionalities into their broader applications.

In return for their YMS investments, logistics operations typically gain better control over yard equipment as well as track assets in real time, improve dock door scheduling, and reduce unload/wait times. And while the business case associated with YMS can be compelling, actual software adoption rates among operations remain fairly low. According to Peerless Research

## Keeping a sharp eye on the yard

For Ramon Trevino, managing 375 dock doors and a 24/7 inbound and outbound operation wouldn't be possible without a robust yard management system (YMS).

As operations manager at Universal Truckload Services in Warren, Mich., Trevino is not only tracking 800 trailer visits and 500 parking spaces on a daily basis, but he's also answering to a pretty demanding customer: Ford Motor Company. "We not only use our YMS for Ford, but we also use it to manage the dunnage that's going back to Ford."

With services that include crossdocks, consolidations, sequencing, sub-assembly, kitting, repacking, and returnable container management, Universal implemented PINC's Advanced YMS in 2010 as a way to increase yard efficiency for its expansive crossdocking operation. Previously, the company was using a manual yard management process that relied primarily on yard trucks and two-way radios.

According to Trevino, the YMS incorporates real-time

visibility into yard truck and trailer locations using RFID and a global positioning system (GPS). Universal operates five or six yard trucks to scan temporary RFID tags that are assigned to inbound trailers when they check-in. The tags are removed at check-out.

Using the YMS, gate guards can more efficiently direct drivers to drop locations or dock doors and provide move requests to the yard truck drivers who use rugged touchscreen displays to interact with the YMS.

Since installing the YMS, Trevino says Universal has been able to eliminate daily manual yard checks, reduce driver wait times while trying to "locate" trailers, improve service times for automotive customers like Ford, decrease trailer queue at the entrance to its yard, and eliminate one yard truck per shift.

"It manages our entire yard in terms of truck location," says Trevino. "If I ever need to find a specific trailer, I know exactly where it is. The YMS represents my 'eyes' out in the yard without me having to physically be out there."



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Group's most recent Technology Usage Study, just 8.3% of companies surveyed are currently using YMS, and of those that purchase WMS, just 3.9% cite YMS as the key reason for making that investment.

According to Dwight Klappich, research vice president for Gartner, YMS tends to come into play when an operation has more than 250 parking spaces out the yard. Those with fewer than that tend to "gravitate to their WMS" yard management, he says. "When the environment isn't too complex, and when all the company needs is check-in and check-out with a guard at the gate, or to find out the exact location of a container, many of the WMS

vendors have good enough functionality to manage those activities."

Now, increase the number of parking spaces to 1,500 or more, says Klappich, and the need for RTLS-based systems, radio frequency identification (RFID), and other advanced capabilities becomes more prevalent. "We're seeing more and more interest in these capabilities from companies that have big yards basically because they're dealing with a lot more complexity."

Where the operation with 200 parking spaces may be working with 10 shipping and receiving docks and 100 trucks a day, for example, the one with 1,500 spaces is probably moving 100 tractor trailers around per hour. The

odds that assets will get lost in the second scenario are much higher, says Klappich, who expects RFID technology to continue gaining traction in YMS as more of those large shippers turn to technology to help control and manage their expansive yard activities.

Klappich says companies that are working with "yard of yards" scenarios—where a manufacturer has one yard at its plant and other, multiple yards at its distribution centers—are also looking more closely at YMS as a way to manage their complex distribution operations. In such cases, companies may be producing widgets at one location, sending them by truck to a DC, and then return-

**"We're talking about the development of low-cost drones that serve as 'readers' in performing tours of the yard to confirm where the assets are and that those assets are, in fact, out in the yard."**

—Clint Reiser, research analyst with ARC Advisory Group



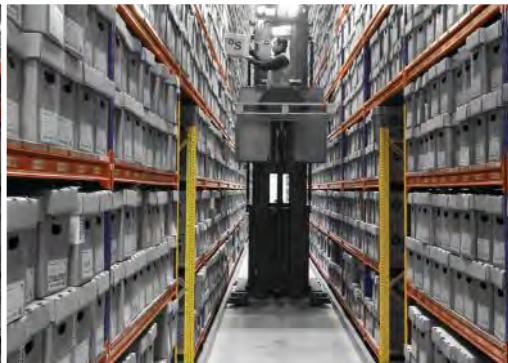
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ing those vehicles back to the plant from the DC. Traditionally, logistics managers and dispatchers had just a single viewpoint of one yard versus more global visibility over multiple locations.

“These companies would like to have an enterprise view of all of their yards,” says Klappich, who again points to PINC as one of the software vendors that’s making strides in this arena. “They want to be able to drill down and gain better visibility over demurrage charges, freight movement, and other important measures across multiple yards.”

**More functionality ahead**

Reiser, whose firm covers the YMS arena as part of its TMS and WMS coverage, says that JDA recently

introduced an “intelligent fulfillment strategy” that integrates planning and execution functionality. He sees a connection between this strategy and the typical yard.

“JDA is looking to incorporate execution on the fulfillment and planning side and sort of blend them with one another,” says Reiser. For example, he says that a company may use the application to factor dock door constraints or limitations into its planning optimization run with a TMS. And, because the yard is strategically situated between the warehouse and the transportation network, incorporating yard-related constraints could help companies optimize their supply chains.

“This will take things to the next level as far as yard



concerned,” says Reiser, who envisions a time when companies can leverage YMS to gain better visibility by breaking down the silos that can exist between warehouse operations, transportation networks, and yard-based activities/assets.

The time horizon for this strategy, and the potential to eke out incremental savings from it, could still be far off for many shippers, adds Reiser. “Conceptually, the idea sounds great, but in reality, adoption will be based on

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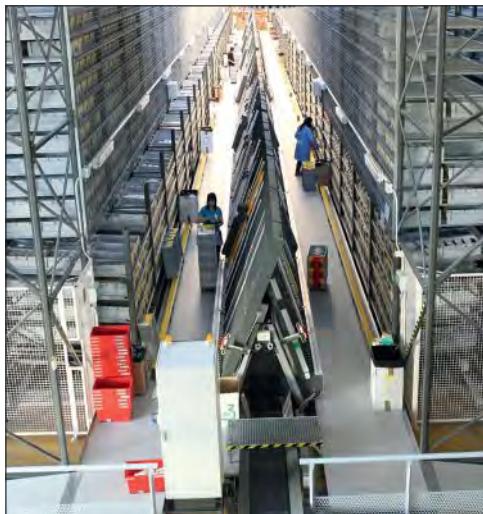


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inactive unless applied, controlling the stop of larger, heavier loads effectively. **Topper Industrial, 800-529-0909, www.topperindustrial.com.**

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Offered in two sizes—24 x 48 inches and 24 x 60 inches—the Little Giant adjustable-height, multi-shelf truck comes with either two or three 14-gauge shelves that can be bolted in place with their



1.5-inch lip edges facing up or down. The bottom shelf is fixed. The upper shelves' height can be raised or lowered in 2.25-inch

increments, and their slope adjusted to level, 7- or 15-degree angles. For transport, two swivel and two rigid casters with 6 x 2-inch non-marking polyurethane wheels are included. Load capacities range from 167 to 229 pounds. **Brennan Equipment & Mfg., 708-534-5500, www.littlegiant-usa.com.**



## Powered cart offers capacity for picking, printing, scanning and computing

Equipped with an on-board rechargeable battery that runs a small label printer, scanner, tablet, laptop or LCD screen for up to 8 hours, the mobile PowerPick offers flexible capacity for order picking. Its lightweight aluminum frame and shelves roll atop 6-inch rubber locking swivel casters that make the cart easy to position to maximize operator productivity. Stations may be ordered with either 4- or 6-foot adjustable shelves that can lay flat or tilt to a 7-degree angle. All models hold up 600 pounds. **Newcastle Systems, 781-935-3450, www.newcastlesys.com.**

## Wire shelving carts can be customized with baskets

Featuring pull out wire or plastic mesh baskets, the Partition Store line of wire shelving carts is engineered for versatility. Shelf heights can be changed quickly and easily, add-on units can be constructed and dolly bases can be added to increase load capacity from 800 to 1,200 pounds. The integrated drawer system allows immediate and easy access to items being transported. Starter units come complete with two frames, four cross bars, a top wire shelf, full extension slides, bottom dust cover and four, 4-inch tall baskets, two with brakes. **Quantum Storage Systems, 800-685-4665, www.quantumstorage.com.**



## All-welded cart creates multi-level layering system

An all-welded cart is constructed to create a multi-level layering system for various materials—including bar, pipe, flats and angles in steel or plastic. The cart is ideal for staging material at a workstation



or transporting materials to/from inventory. Rolling easily on four 8-inch phenolic casters (two rigid, two swivel), the cart has a solid steel deck in 48- or 72-inch lengths. It holds an evenly distributed capacity of 3,600 pounds and is painted safety blue. **Jesco Industries, 888-463-1242, www.jescoonline.com.**

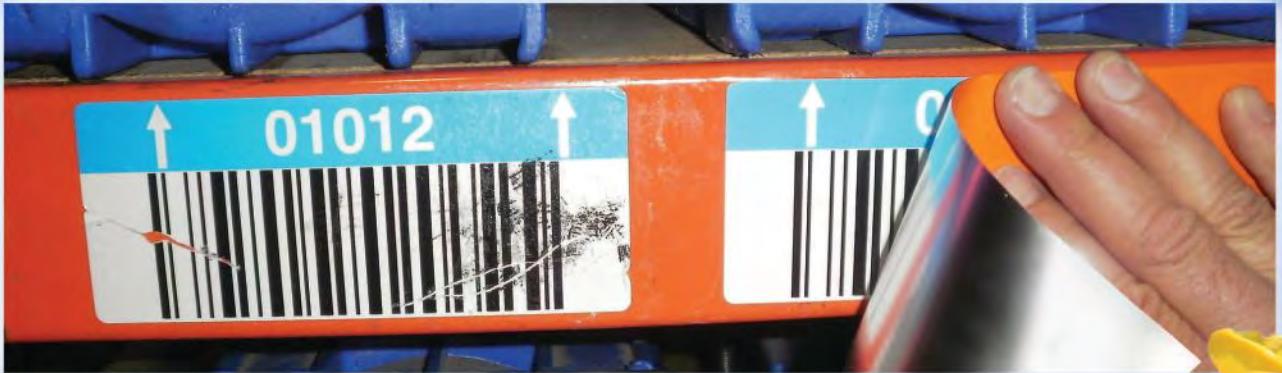
## Cart incorporates flow rack with wide spans and 1,000-pound capacity

A new, high-capacity mobile flow rack contains a diverse array of components in different sizes, weights and shapes. Ideal for movement of items from storage to assembly, the 1,000-pound capacity racks measure 56 x 44 x 65 inches and feature five supply levels. Each supply level has five flow lanes with standard and flanged skatewheel conveyors to handle small bins and larger totes and boxes. Because they are low-friction, the skatewheel conveyors permit shallow gravity flow lane angles for applications that require first-in/first-out repeatable container flow, and are suitable for plastic returnable totes or corrugated boxes. For transport, the racks ride on 4-inch swivel casters for easy movement, with locking brakes for secure positioning at their destination. **Creform, 800-839-8823, www.creform.com.**



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## Place parts where needed with portable storage unit

Constructed of sturdy, industrial-strength, 14-gauge steel with a powder-coated finish, the PartsMobile is a 68-inch-tall portable storage unit that speeds shop and assembly processes.



The durable unit comes in two styles. The five-shelf model offers two removable small parts trays, eight S-hooks, three removable pegs and

heavy-duty caster wheels; the three-shelf version puts more space between heavy-duty shelves. Each shelf holds up to 200 pounds. **Herkules Equipment, 800-444-4351, www.herkules.us.**



## Navigate congested operations with compact trailer unit

Handling loads up to 2,000 pounds, the new Pack Mule series of compact trailers is offered in sizes starting at 30 x 40 inches and can be easily configured to unique application requirements. Specifically engineered and manufactured for towing individually or in chains, the six-wheel center steer unit can be easily maneuvered through tight spaces. This accommodates highly congested work centers and distribution warehouses. They are ideal for use in lean manufacturing applications. **Wesley International, 800-241-2869, www.packmule.com.**



## Spring-loaded recycling collection cart

The Poly-Trux 54P-18 recycling collection cart can be outfitted with an optional, ergonomic spring-loaded platform that reduces bending and reaching into the utility truck, eases lifting and promotes complete dumping. Set inside the truck, the durable plastic platform automatically rises as bottles, cans, papers, scrap metal and other materials are removed. The spring mechanism underneath is hidden to prevent contact. Rotationally molded of weatherproof, waterproof polyethylene, the cart stands up to long-term, indoor/outdoor use. Features include a heavy-duty truck base constructed of 0.625-inch painted marine plywood and six industrial strength, non-marking casters. Options include custom colors, permanent lettering and graphics, covers, tow hitches and forklift safety tubes for secure cart dumping. **Meese Orbitron Dunne, 800-829-4535, www.recyclingcarts.com.**



## Maximize worker ergonomics with automatic height adjusting carts

Auto-Hite Carts automatically adjust to place work-pieces at the optimal operator height for maximum safety, productivity and ergonomics. Spring-loaded and self-leveling, the carts feature a 22- to 26-inch window of vertical travel, making them ideal for

any operator or part height requirement. Hydraulic-free, the carts do not require electric or air and only require minimal maintenance. Ideal for assembly line or sub-assembly operations, the carts come in standard deck sizes from 20 x 20 inches to 20 x 30 inches and hold capacities up to 1,000 pounds. **Verti-Lift, 502-361-0180, www.verti-lift.com.**

## Powder coat finish now standard on 3-inch, heavy-duty casters

All of the supplier's standard 3-inch-wide, heavy-duty caster products now come standard with a black powder coat finish. The powder coating can also be specified in a selection of optional colors for customization. Replacing a conventional paint process, the powder coating provides enhanced protection against the elements and increases the products' lifespan. It also minimizes caster maintenance requirements. **RWM Caster, 800-634-7704, www.rwmcasters.com.**



## Wheel's tread composition boosts pushing, pulling forces

Featuring a unique polyurethane tread composition that assists in propelling a load forward, the CC Apex wheel boosts pushing and pulling force both before and during rolling. The tread also absorbs vibration to reduce noise and is formed in a doughnut shape for smooth maneuverability to minimize ergonomic strain. Offered in 1.25- and 2-inch widths, the casters come in diameters ranging from 4 to 10 inches and carry capacities from 400 to 1,500 pounds. **Caster Connection, 800-544-8978, www.casterconnection.com.**





## Transport loads on lightweight aluminum platform trucks

Heavy duty and corrosion resistant, a line of aluminum treadplate platform trucks feature five-bar tread on the entire deck to prevent load slippage during transport. For convenience, the carts include handle sockets at each end and can be equipped with one or two handles. Manufactured to be lightweight, the carts carry uniform loads up to 3,600 pounds. Their box-style frame is fitted with a non-marking rubber strip to protect walls, and rides atop two rigid and two swivel 6 x 1.625-inch poly-on-poly casters. Vestil Manufacturing, 260-624-4330, [www.vestil.com](http://www.vestil.com).

## Easily maneuver and empty narrow-width tilt truck

Ideal for use in construction and waste handling, a new heavy-duty tilt truck is built with a narrow width and includes bumpers, allowing it to fit through standard door openings and protecting finished walls. Its optimized forward-tilt angle allows easy movement into and out of tight spaces while holding long

objects safely in the cart, while a dump strap makes them easy to empty. Manufactured of light gauge



steel, the cart is durable and maneuverable. In between use, integrated stacking plates allow multiple carts to be stacked on top of each other. Valley Craft Industries, 651-345-3386, [www.valleycraft.com](http://www.valleycraft.com).

## Start, stop and turn loaded carts with ergonomic multi-wheel caster

Offered in diameters from 4 to 12 inches and in 2- and 3-inch widths, the maintenance-free TWERGO dual or triple ergonomic wheel caster has been engineered to reduce the force needed to start, stop and turn a loaded cart. All wheels rotate independently of each other. In lab testing, the device's patented rotating mechanism reduced initial push force and turning force by an average of 25%. Features include a unique tread thickness that minimizes friction and eliminates scrubbing and sliding when turning while providing the impact resistance of normal wheels. The multiple wheel configuration is anchored by a robust spanner, and includes a wheel hub with aluminum die-cast cores for maximum strength. Caster Concepts, 888-972-9861, [www.casterconcepts.com](http://www.casterconcepts.com).



## Maintenance-free casters, wheels

The Swivel-EAZ Pro precision wheel and caster are engineered to be maintenance free and support limitless motion with ergonomic ease of movement. Offered in widths of 2 inches and diameters from 3- to 8-inches, both handle load capacities up to 1,500 per unit. The casters employ a three-axis system for easy pushing and pulling motions in any direction while the wheel reduces floor contact pressure. Aubin Industries, 800-324-0051, [www.aubinindustries.com](http://www.aubinindustries.com).

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## 52-inch-tall casters tote 200-ton payloads

Weighing 8,000 pounds and towering 52 inches above factory floors, the custom-engineered Colossus caster totes a payload of 200 tons. It features a spring-loaded suspension system to absorb shocks, an eight-position swivel lock for directional control, 7-inch diameter oscillating axle to accommodate uneven surfaces, and a foot-operated braking system. To maneuver and handle the massive load, the caster incorporates swivel construction of 32- and 18-inch-diameter flame hardened raceways and 96 1.5-inch-diameter bearing balls. The caster rides on an extreme-duty press-on tire measuring 36-inches in diameter by 20 inches wide with tapered roller bearings. **Hamilton Caster, 800-733-7655, [www.hamiltoncaster.com](http://www.hamiltoncaster.com).**

## Empty heavy cart loads with dumping frame

For elevated, rotational dumping of full loads, a line of heavy-duty carts can be paired with a separate dumping frame



that secures to an overhead hook hoist or forklift. The frame attaches to the companion cart with standard trunnion pins that adjust to accommodate load weights ranging from light and bulky to heavy and dense. To empty the loaded cart, the operator pulls on a lanyard to trigger a spring on the frame. This causes the cart to overturn and rotate 360 degrees for complete emptying. Once emptied, the cart easily returns to an upright position for placement back on the ground without operator strain. **CECOR, 608-845-6771, [www.cecort.net](http://www.cecort.net).**

## Retrofit existing parts carts with shear disc casters

For use in tug applications, a line of shear disc casters is constructed to reduce damage to products, rolling equipment and plant floors. They feature spring-less non-linear suspension to protect worker hearing by cutting vibration-generated noise of in-plant trailers up to 50%. Equipped with a heavy-duty caster yoke, the units incorporate an SAE 1050 forged steel top plate and yoke base with integral king pin, and flame-hardened raceways for shock load wear resistance. The caster's compact design works within the confines of conventional mounting dimensions, allowing existing parts carts to be converted. **Darnell-Rose, 248-917-2914, [www.casters.com](http://www.casters.com).**



## Optional brake add-on to heavy-duty caster

Manufactured with tight tolerances and constructed for extended service life, even under stressful applications, the GF series premium heavy-duty caster handles high weight capacity requirements. The cast-



ers come in 4-, 5-, 6- and 8-inch swivel and rigid sizes, all with an optional brake. The 6- and 8-inch sizes allow for a leading or trailing brake with a change wheel brake option. Equipped with an industry-standard top plate measuring 4.5 x 6.25 inches, the series handles loads ranging from 1,425 to 2,200 pounds. Features include a dual precision ball bearing, nylon wheel and zinc-plated forged steel rig construction. **FootMaster North America, 866-362-3226, [www.footmastercasters.com](http://www.footmastercasters.com).**

## Customize platform cart with multiple handle, rail and caster options

Several new styles of the 2,000-pound capacity VERSA/Deck structural foam platform truck system have debuted. Customizable with numerous handle, rail and caster options, the cart now incorporates tie-down slots in the steel-reinforced deck to secure loads during transport. Other new features include a choice of handle styles with wire mesh sides; high-low handles to support materials such as drywall and plywood; and posts that accommodate long pipes, tubing and carpet rolls. For effortless, quiet rolling over most surfaces, an optional thermoplastic rubber caster with precision bearings may be specified. **Akro-Mils, 800-253-2467, [www.akro-mils.com](http://www.akro-mils.com).**



## Random case erector uses robot

Engineered for end-of-line packaging operations, the new RCE robotic random case erector combines a FANUC M20iA/20 six-axis robot with multiple case magazines and a bottom flap folder with integrated 3M tape head. The system is ideal for fulfillment centers and contract packagers because it eliminates downtime from changeovers to accommodate multiple box sizes. It also removes manual, repetitive tasks, improving worker ergonomics. For further productivity, the machine can also incorporate technology to assign, verify or track lot or serialization numbers to cases. **Combi Packaging Systems, 330-458-2886, [www.combi.com](http://www.combi.com).**



## Rugged keyboard enhances touchscreen computer

For industrial applications and environments where on-screen keyboards are not ideal, the supplier now offers the iKey DU-5K-FSR completely sealed industrial keyboard. Fully resistant to dirt, water, oil and dust, the peripheral device features an integrated force sensing resistor and no breakable moving parts. Together, the S9000 computer and keyboard can be implemented as a fixed or mobile-mount pair that work as one cohesive unit to maximize productivity in harsh environments. **Glacier Computer, 866-724-6257, [www.glaciercomputer.com](http://www.glaciercomputer.com).**



## Square pallets for transport of flexible intermediate bulk containers

The Endur S7 and C7.2 reusable plastic pallets come in two square dimensions: 47 x 47 inches and 5 x 45 inches, respectively. Used to store and transport flexible intermediate bulk containers (FIBCs), or bags, in high-bay warehouses, the pallets handle load capacities up to 2,756 pounds on high racks. The C7.2 was developed for transport in ISO containers; the S7 allows space for six 23.6 x 15.75-inch modules per location, holding 20% more items than an industrial pallet or for transporting kegs. Features include a choice of three or six runners, and an open or closed upper deck that can optionally be equipped with anti-slip strips. **CABKA-IPS, 314-731-0302, [www.cabka.com](http://www.cabka.com).**



## Protect tablets with rugged cases

Rugged ProGear Voyager cases protect Apple iPad Air and iPad mini devices. Slim and lightweight, the cases feature a layer of rigid polycarbonate and energy-absorbing silicon. They are engineered to military standards and formulated to protect the ensconced device from drops and shock. Features include an integrated kickstand with dual positioning for easy typing and video viewing, and silicon ridges for all-weather grip to discourage sliding. They come in two color combinations: black/gray or pink/gray. **Pelican Products, 310-326-4700, [www.pelican.com](http://www.pelican.com).**



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## High-pressure protective packaging films address longer shipping, storage cycles

Ideal for use in high-pressure applications to protect products that require longer shipping or storage cycles, two new high-performance inflatable cushioning films have been introduced. The HC Performance hybrid cushioning films feature multiple square air chambers instead of a single large cell, allowing air to transfer between the individual chambers. Two versions are offered: one engineered for high air retention properties to protect heavy items; and a second,

lighter-duty version for packaging lighter weight products. The films work with the supplier's AirSpeed HC Versa unit that automatically inflates the rows of material on-demand. Pregis, 877-692-6163, [www.pregis.com](http://www.pregis.com).



## Eliminate strain injuries with hydraulic manipulators

Ideally suited for heavy-duty industrial materials handling applications, hydraulically powered manipulators allow a worker to hold and maneuver parts weighing up

to 1,000 pounds in three dimensions. The manipulators assist with precise materials handling placement while preventing strain injuries. Powered by on-demand hydraulic pumps, their throttle style control facilitates variable speed motion to ensure precise handling. Features include

maximum 10-foot reach radius, vertical travel of 64 inches, and 360-degree rotation. For accurate parts handling, end effectors/tooling are offered with vacuum-, mechanical- or pneumatically-actuated grippers. TDA Buddy, 269-349-8105, [www.tdabuddy.com](http://www.tdabuddy.com).



## 4-axis robots offered in three performance tiers

For fast, precise automation, the eCobra family of SCARA four-axis robots provides controller-less architecture in a performance-based pricing model. Offered in three performance tiers—Lite,

Standard and Pro—the models address different application complexity and throughput requirements. The robots are configured with 23.6- and 31.5-inch reach configurations, run on the supplier's eV+ operating system, and incorporate fully embedded controls to save floor space and simplify installation. Applications include mechanical assembly, materials handling and packaging. Adept Technology, 925-245-3400, [www.adept.com](http://www.adept.com).

## Meet GHS regulation with durable labels

The CILS-8100GHS range of computer printable durable labels has been developed to meet the Globally Harmonized System (GHS) regulation deadline of June 2015. Engineered specifically

for the classification and labeling of chemical drums, the labels resist solvents, chemicals, abrasion, weathering and extreme temperatures ranging from -320.8°F to 730.4°F. They feature a pre-printed, solvent-resistant coating that allows the addition and/or printing of variable data directly from a standard, in-house laser or thermal transfer printer. CILS International, 877-512-8763, [www.cils-international.com/usa](http://www.cils-international.com/usa).



## Leverage real-time data from monitoring systems

To enhance preventive and predictive maintenance, the new Meters module for the supplier's Computerized Maintenance Management System (CMMS) communicates directly with existing monitoring systems to extract, consolidate and deliver real-time data used for alerting operators and maintenance personnel of current issues or trends. The solution provides better insight into asset condition, helping to avert potential failures. Additionally, information on energy usage, alerts and meter monitoring are automatically gathered and consolidated for pro-active energy budget planning and savings. The solution is accessible either on-cloud or on-premise and configured for mobile devices. Dematic, 877-725-7500, [www.dematic.com](http://www.dematic.com).

# PRODUCT Showcase

## Single conveyor platform offers multiple transport options

Two new conveyor models have been added to the 3200 Series platform: the Flat Belt and Precision Move styles join the previously released Modular Belt version. Engineered to move medium- to heavy-sized parts precisely, the conveyors support bulk handling with flexible layouts. Ideal for heavy-duty part handling, the Flat Belt model configuration options include an end or center drive, a Z-frame and a sidewall cleated belt. Providing a low profile, the Precision Move belt conveyor platform is ideal for assembly, manufacturing and packaging because it moves product accurately at specific times, distances and intervals. It includes a timing belt, integrated servo motor and drive, controls and mounting for the gearmotor, and in belt widths up to 18 inches. **Dorner Manufacturing, 800-397-8664, [www.dornerconveyors.com](http://www.dornerconveyors.com).**



## Measure and weigh smaller, irregularly shaped items with one device

With a measurement capacity up to 18 x 12 x 12 inches that is accurate to 0.05 inches and a weight resolution of 0.005 pounds, the CubiScan 25 dimensioning and weighing system has been engineered to measure and weigh smaller, irregularly shaped items for distribution, packaging and warehousing applications. The unit integrates infrared sensing technology to measure smaller, individual items as well as smaller boxed and case-pack items. Engineered to maximize storage space and enhance cartonization methods, the device can reduce the use of packaging materials to potentially decrease shipping costs. Accessible by a touchscreen interface, the system includes Qbit software with menu-driven operator controls, data storage/transfer and diagnostics. For customization, a mobile cart and accessories—such as a portable power supply and handheld bar code scanner—may be added. **Quantronix, 801-451-7000, [www.cubiscan.com](http://www.cubiscan.com).**



## Rugged tablet computer gets an upgrade

Engineered for field professionals, the Algiz 10X 10-inch tablet has been upgraded to run the new Windows 8.1 Pro operating system with a more powerful processor that speeds startup and operation, increased software compatibility and doubled processor performance. Weighing 2.9 pounds, the device is IP65-rated and meets stringent MIL-STD-810G military standards for protection against dust, water, vibrations, drops and extreme temperatures. For better wireless communications, the computer now supports 802.11 b/g/n on 2.4 GHz, 802.11 ac and 802.11 a on 5 GHz, as well as LTE for faster data speeds both up- and downstream, and increased overall network coverage. **Handheld Group, 541-752-0313, [www.handheldgroup.com](http://www.handheldgroup.com).**



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## Collapsible bulk container engineered to resist damage

To minimize damage in use, BulkStac 45 x 48-inch footprint reusable plastic bulk containers have been engineered with a variety of features that optimize strength. Recessed hinges on the collapsible walls connect with a concave inset for protection, while radii at the feet corners reduce the risk of fracture or splitting. A one-piece base prevents fork strap breakage, while a periphery runner improves stability without the need for a center foot. For more usable internal cube, the container has a flat deck, while its overall tare weight has been reduced for easier handling and lower transportation costs. The containers come in a variety of heights and may be equipped with optional access doors on all four sides for certain models. **SSI Schaefer Systems International, 704-944-4500, [www.ssi-schaefer.us](http://www.ssi-schaefer.us).**



## Mobile computers for indoor, outdoor use

A high-performance line of rugged mobile computers can be used for indoor and outdoor applications. Compact, the computers feature LED displays, Intel processors, Bluetooth connectivity for scanners and other input devices, integrated mobile broadband and back-up batteries for uninterrupted operation. They can be attached to both heavy equipment vehicles and gas, diesel or electric-powered forklifts. **JLT Mobile, 480-705-4200, [www.jltmobile.com](http://www.jltmobile.com).**



## Two-way radios enhanced for hands-free communication

MOTOTRBO digital two-way radios have been enhanced with a variety of new features to allow wearers to keep their hands free while remaining in touch. A text-to-speech function delivers text messages, work order tickets, channel names and other important information without disrupting tasks. For increased efficiency, automatic battery data is sent to a central database, while GPS capability allows a dispatcher to determine what's happening and where for event-driven location updates. User-selectable audio profiles allow workers to customize the sound of their radios based on personal preference, while a push button switches audio from speaker to headset. **Motorola Solutions, 888-325-9336, [www.motorolasolutions.com](http://www.motorolasolutions.com).**

## Measure chain elongation for preventive maintenance

The new, intelligent CCM continuous chain monitoring system measures wear elongation of chains in use to warn maintenance personnel in advance if the chain needs to be replaced. Using LED indicator lights, the system indicates where, and when, preventive maintenance is needed. The system integrates quickly and easily into new chain applications or can be retrofitted in existing plants and machines without special add-on components. Because measurement is contactless, the chain drive is not affected in any way; no additional deflection pulleys or supports are needed. **iwis drive systems, 317-821-3539, [www.iwisusa.com](http://www.iwisusa.com).**





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# PRODUCT Showcase

## Fully automated storage for small- to medium-sized SKU counts

Adaptive and fully automated, the PowerStor 4000 system is tailored for facilities with small to medium storage needs. It can retrofit to existing space to maximize density and effi-



ciency, doubling current storage capacity in the same footprint by maximizing density. The system is constructed with modular components, including shuttle-based

retrieval bots, allowing it to be adjusted or repositioned to adapt to changing products and throughput demands.

**Power Automation Systems, 209-249-1616, [www.powerautomationsystems.com](http://www.powerautomationsystems.com).**

## Lift heavy loads with hydraulic powered equipment

Offered in a range of sizes and capacities, a new selection of hydraulic lifting equipment includes loading dock lifts and scissor lifts that are ruggedly constructed and easy to operate. The dock lifts service a variety of trucks, vans and tractor-trailers with capacities up to 10,000 pounds. Also offered are double



scissor lift tables that safely lift loads up to 73 inches, and high-capacity scissor lifts that handle capacities from 12,000 to 25,000 pounds—making them ideal for heavy lifting in automotive, aircraft and heavy machinery manufacturing. The equipment features

high tensile cut steel plate for long life and durability, hydraulic cylinders made of hard chrome steel with included velocity safety fuses, and pivot points that use self-lubricating aircraft bushings. **Safebilt, 800-888-0188, [www.safebilt.com](http://www.safebilt.com).**



## Accurate, reliable weighing in dry and wet environments

A new line of rugged Industrial Basic Scales delivers accurate, reliable weighing in dry and wet environments. Offered as a low-cost option to optimize processes in simple industrial applications, the scales come with stainless or mild-steel weighing platforms, easy-to-read terminals and secure overload protection. Intensively quality tested, the line includes basic portioning scales for fast, mobile food weighing; checkweighers for food and manufacturing applications; floor scales and pallet-weighing solutions for logistics and warehousing applications; and basic counting scales for accurate order picking, packaging and completeness checks. **Mettler Toledo, 800-638-8537, [www.mt.com](http://www.mt.com).**



## Combination lifter includes beam, pipe grabs

For lifting and movement of pipes, a combination Rapid Ready lift beam

is paired with AN13 series pipe grabs sized specifically for the pipe to be moved. In addition to increasing stability for the longer lengths of pipe, the package also increases lifting capacity. Combination lifters can be created from in-stock products to accommodate any length between 8 and 20 feet, or can be custom built to handle pipes up to 50 feet long. Other attachments—such as roll hooks or lifting tongs—can also be added for specific applications. Every configuration is proof-tested prior to shipment. **Tandemloc, 800-258-7324, [www.tandemloc.com](http://www.tandemloc.com).**

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**TITLE:** President, the Association for Advancing Automation (A3)

**LOCATION:** Ann Arbor, Mich.

**EXPERIENCE:** President for eight years and has been with the association for 32 years.

**Modern: Tell us about A3.**

**Burnstein:** A3 is the parent group for the Robotic Industries Association (RIA), the Automated Imaging Association (AIA) and the Motion Control Association (MCA). We represent more than 800 companies that provide automation solutions and our mission is to promote the reasons why companies should automate.

**Modern: How do you sum up the state of automation today?**

**Burnstein:** Automation is booming everywhere and in all industries, not just manufacturing. Companies realize that to compete in the global marketplace, they have to automate. For instance, China is the fastest adopter of robotics. The Chinese are now under the same pressure around speed to market as everyone else. What's more, large companies are demanding great quality, regardless of where they do business. The cost of poor quality outweighs the cost of the automation.

**Modern: Traditionally, the justification for automation has been a reduction in labor. Is that still the case?**

**Burnstein:** The cost of labor is one part of the discussion. However, there are other factors today. In the United States, we are automating to reshore production because companies fear losing their intellectual property when



Sara Pearson Specter

they outsource. They also want to be closer to their markets to reduce delivery times. Political instability is another factor. In fact, if you look closer at the jobs discussion, you have to consider that automation is helping to save jobs. A lot of companies tell us they wouldn't be in business without automation.

**Modern: Can you tell us more about the state of the robotics market?**

**Burnstein:** The market for robotics is growing globally. The automotive industry continues to be a big driver, and now their Tier 1 suppliers are adopting robotics, too. Beyond that, we're seeing a new type of robot emerge that can work side by side with people. We call that collaborative robotics. This is allowing robots to go into new environments such as retail, entertainment and medical. Nothing is more collaborative than a robot involved in your surgery. But, it is also opening robotics up for new applications in traditional markets, like final assembly in automotive. Another emerging

area is mobile robotics, where we put the robot on a mobile base or create devices that have mobility. We're not there yet, but that's where we're headed.

**Modern: One of the criticisms of automation in general, and robotics in specific, is that it causes job loss. Based on your earlier answer about robots saving jobs, how do you view that issue?**

**Burnstein:** We believe the drop in prices and advances in technology are going to make robotics applicable to many, many industries. That does make people concerned about jobs. What's interesting to me is that the unemployment rate is coming down even as the sale of robotics is growing. There are a record number of job openings in the United States. We really think the biggest impediment to the growth is that there aren't enough qualified people who can do these jobs. In fact, the robotics industry will create jobs for people who can install, run and maintain robots. □

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