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June 2014

Darryl Branch, senior vice president of logistics and integration, Tech Data

Tech Data asks: What's next? 18

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CeMAT 2014 draws 53,000 visitors from 65 nations

ACCORDING TO ORGANIZERS, CeMAT showcased more than 4,000 innovations from 1,025 exhibiting firms—58% of them from outside Germany.

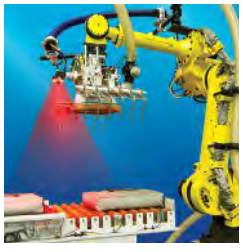
"CeMAT represents a booming industrial sector and this year yielded 1.7 million business leads," said Andreas Gruchow, member of the managing board at Deutsche Messe in charge of CeMAT. "That is a significant increase compared to 2011. Our exhibitors have closed deals worth millions of euros, and initiated orders totaling an estimated $10 billion or more."

Drawing 53,000 visitors from 65 nations to Hannover, this year's CeMAT attendees included 33% who came from abroad, with Europe taking a 70% share, followed by Asia (13%), the Americas (9%), Africa (5%) and Australia (3%). There was a strong increase in attendance from Brazil, the United Kingdom, Poland and Russia.

The next CeMAT will run for four days and be held in two years in Hannover, from May 31 to June 3, 2016.

Manufacturing Day 2014 announces partnership with "American Made Movie"

ORGANIZERS HAVE ANNOUNCED that the feature documentary film "American Made Movie" will serve as the official movie for Manufacturing Day on Oct. 3, 2014.



The documentary's producer will join the effort to encourage manufacturing facilities to host public tours on Manufacturing Day and allow them to show its film, which focuses on small to large companies that have seen success with products made in the United States.

"Our hope is that people will recognize they have the power to transform America's future and be a part of the solution by understanding the relationship between what is made and what you buy every day," said Vincent Vittorio, co-director of "American Made Movie."

Supported and promoted by its official media partner, the Science Channel and its manufacturing-focused series, "How It's Made," Manufacturing Day programs are supported by a panel of co-producers including the Fabricators & Manufacturers Association (FMA), the National Association of Manufacturers (NAM) and The Manufacturing Institute (MI).

Pregis Corp. sells European, North American operations

AIRPACK, IN LODI, ITALY, has acquired Pregis Corp.'s European protective packaging operations for an undisclosed amount.

Airpack had purchased Pregis' Italian operations in 2012. The acquisition follows an April announcement that private equity firm Olympus Partners in Stamford, Conn., had acquired Pregis' North American business.

The acquisition includes Pregis operations in the United Kingdom, Belgium, Germany, Romania, Poland, Czech Republic and Hungary. Manufacturing capabilities include foam and bubble extrusion, engineered foam and mailers.

In North America, Pregis' current management team, led by Kevin Baudhuin, president and chief executive officer, will continue under Olympus ownership. Pregis operates 14 facilities producing a variety of protective packaging products and value-added system solutions, and partners with industrial and packaging distributors, fabricators and specialty suppliers to deliver solutions to a wide variety of end-user markets.

MHI: Materials handling equipment new orders forecast to grow 8% to 9%

MATERIALS HANDLING EQUIPMENT new orders grew 8.8% in 2013, and the outlook for 2014 and 2015 is for growth of 8% to 9%, according to the latest Material Handling Equipment Manufacturing Forecast (MHEM) released by MHI.

In addition, materials handling equipment shipments grew 7.8% in 2013 and are forecasted to grow 5.5% in 2014 and 9.9% in 2015. Domestic demand (shipments plus imports less exports) grew 8.6% in 2013 and are forecast to grow just 5.4% in 2014 and 9.9% in 2015.

The MHEM forecast of materials handling equipment manufacturing is released each quarter by MHI and looks 12 to 18 months forward to anticipate changes in the materials handling and logistics marketplace.

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MODERN MATERIALS HANDLING®

PRODUCTIVITY SOLUTIONS FOR DISTRIBUTION, WAREHOUSING AND MANUFACTURING

Darryl Branch, senior vice president of logistics and integration, Tech Data

PHOTO: SHANNON FAULK/GETTY IMAGES

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NEWS

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MICHAEL LEVANS
GROUP EDITORIAL DIRECTOR

See the bigger picture

A few years ago, executive editor Bob Trebilcock proposed a series of feature stories called Big Picture—pieces that would break out of our traditional equipment-centric coverage and focus on the broader role materials handling plays in driving larger company initiatives.

The premise rested on the idea that materials handling has "come out of the shadows" and is now directly tied to business operations; and thus, can build a competitive advantage that creates a measurable impact on the bottom line.

The timing for this series was perfect. Since its launch, we've documented how the e-tail revolution has pushed the productivity limits inside the nation's four walls, forcing out traditional thinking at break-neck speed to make way for innovated systems designed for the challenge of omni-channel fulfillment that came in tow.

By stepping back for this broader view, these stories have given us a clearer view of how warehouse/DC operations are not only tied to success, but in many cases have become the foundation of the business strategy.

This month, Trebilcock continues his Big Picture series with "5 ways to handle peak demand," a closer look at how the rise of e-commerce, more frequent promotions, and competitive service-level agreements are creating more peak periods than ever before. More strategic in nature than previous Big Picture articles, this story neatly captures the forces that have eroded the traditional peak demand, defines the equipment and processes savvy e-tailers and distributors are employing, and offers practice tips on how to shorten peak response time.

"Many elements have converged to fundamentally change peak demand," says Trebilcock. "In the past, retailers would see seasonal, predictable peaks that fell neatly onto a calendar. They'd see a bump in orders for a few days or weeks, and then it would taper back down to a manageable average. In most cases, those days are gone."

Trebilcock uses the case of Untied Stationers, a distributor and e-fulfilment provider of business products, to neatly define the new challenge. Bill Stark, United's vice president of engineering, says that not only were these peaks predicable, but so was the flow of work inside the facility.

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

And with the promise of same-day and next-day delivery, Stark's crew is now managing the flow of orders in half-hour windows to hit carrier cut off times. "They're going to pull the truck out at 7 p.m. whether something is on it or not."

United's challenge is far from unusual, yet finding the right mix of equipment, process and labor remains daunting. "Every situation will demand a specific solution tailored to that facility," says Trebilcock. "However, what we found overall is that managing peak is more often a combination of clever staffing and flexible processes enabled by technology."

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MANUFACTURING

BDO: Supply chain and labor top list of risks in manufacturing industry

SKILLED WORKER SHORTAGE CONCERNS HEIGHTENED BY INDUSTRY GROWTH.

BY JOSH BOND, ASSOCIATE EDITOR

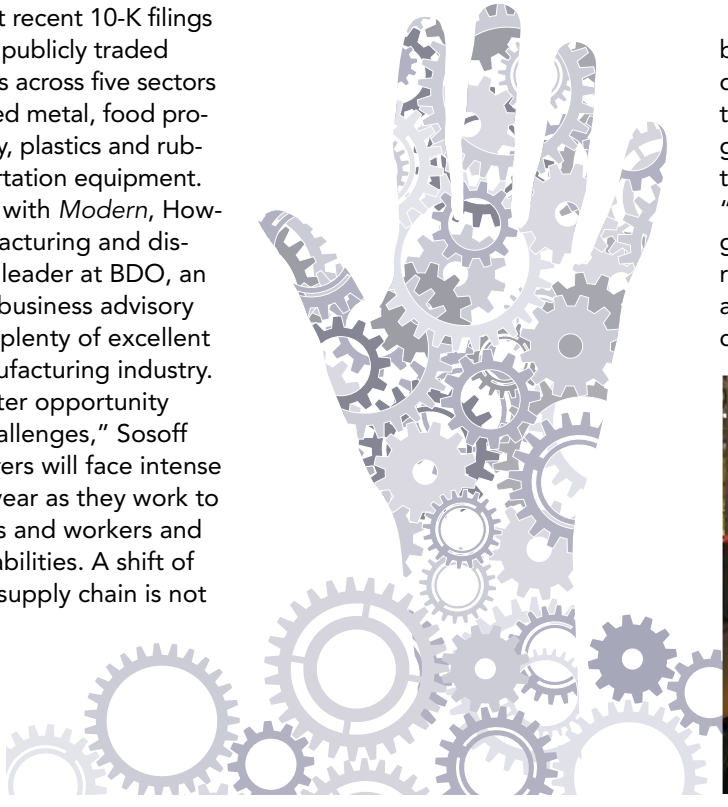
IN A RECENT STUDY of 100 top publicly traded U.S. manufacturers, 100% identified the security and efficiency of supply chain operations as a risk, up from 83% in 2013.

The *2014 BDO Manufacturing RiskFactor Report* examines the risk factors in the most recent 10-K filings of the largest 100 publicly traded U.S. manufacturers across five sectors including fabricated metal, food processing, machinery, plastics and rubbers, and transportation equipment.

In an interview with *Modern*, Howard Sosoff, manufacturing and distribution practice leader at BDO, an accountancy and business advisory firm, said there is plenty of excellent news for the manufacturing industry.

"But with greater opportunity comes greater challenges," Sosoff said. "Manufacturers will face intense competition this year as they work to attract new orders and workers and expand their capabilities. A shift of focus toward the supply chain is not surprising."

As U.S. competitiveness increases, Sosoff said, some companies are looking at near-shoring to combat risks of disruption to the supply and the ability to meet demand. Labor is a central component to strengthening a supply chain, even as the usage of automated systems expands. In fact, labor was cited by 97% of manufacturers as a risk this year, up notably from 2013 (75%).



"The challenge is two-fold," Sosoff said. "As manufacturing expands and evolves, it's hard to find employees with the right skills. Part two is baby boomers retiring. If they can't find skills for expansion, how will they find skills for replacement?"

Sosoff outlined initiatives from both the ground up and the top down. He cited a National Association of Manufacturers (NAM) program in which plants are opened to students for a day in an effort to "dispel perceptions that this is their grandfather's manufacturing environment." More technical training and public education will help, but companies are also making changes

to the way they do business.

"We have seen some get creative by using flexible schedules to let employees dictate their own hours," Sosoff said. "We will see more of that."

From the top down, Sosoff suggested governments should work to re-engineer regulations just as businesses routinely re-engineer processes, including purging outdated practices from decades ago. "It's not any one regulation, but the combination of them all," he said. "Over the last 50 years, it's been like building blocks as more regulations just get added."

Sosoff cited a NAM article that recently estimated it can cost $14,000 per year, per employee for regulatory compliance, compared to $8,000 per employee for non-manufacturing businesses. For smaller manufacturers, it can be as much as $28,000.

SOFTWARE

TECSYS announces acquisition of Logi-D

TECSYS, a leading supply chain management software company, announced it has signed an agreement to purchase all of the shares of Logi-D Holding, a provider of point-of-use technology for supply chain automation servicing hospitals and healthcare organizations.

"This acquisition will bring together two Quebec-based technology companies with complementary product lines, and extend our leadership in healthcare supply chains where more than 30% of our business is currently coming from," said Peter Brereton, president and CEO of TECSYS, who said Logi-D's technology was proven to reduce the time clinical staff spend managing inventory.

"Being a part of the top solution for healthcare supply chains opens new avenues for us to expand our

product footprint," said Richard Philippe, founder and CEO of Logi-D. The company will acquire Logi-D's shares for $2,950,000 in cash, subject to adjustment, and $100,000 in common shares of TECSYS. Logi-D had revenue of $5,572,000 in its fiscal year ended June 30, 2013. Logi-D, based in Laval, Quebec, has approximately 27 employees.

SUPPLY CHAIN

Supply Chain Council to merge with APICS

Two renowned supply chain-centric organizations—APICS, a supply chain operations management and research firm, and the Supply Chain Council, a global, non-profit supply chain management organization—are set to merge.

The joint organization will be known as APICS. The APICS Foundation will be called APICS Supply Chain Council, with the SCC brand being maintained and leveraged post-merger, according to APICS.

APICS CEO Abe Eshkenazi said in an interview that there were multiple drivers behind this merger.

"APICS and SCC have collaborated on a number of occasions in the past, during which time our organizations got to know each other," he explained. "This merger not only brings our organizations closer, but also unites us with an important purpose: advancing supply chain performance and developing supply chain talent."

Corporations, said Eshkenazi, want to know that professional standards are aligned with corporate supply chain competencies, and the combination facilitates this alignment. Eshkenazi says companies are looking for a single source for their supply chain education, training and certification programs.

When the merger complete, Eshkenazi will continue to serve as CEO of APICS and SCC executive director Joseph Francis will serve as executive director of the APICS Foundation. Through the end of 2014, there will be an expanded, transitional Board of Directors with board members from each organization's Board.

DISASTER RELIEF

ALAN continues response to central U.S. tornadoes, seeks contributions

Following several deadly tornadoes across the central United States in April, the American Logistics Aid Network (ALAN) has been coordinating support services offered by warehousing and transportation companies.

As ALAN works to improve the effectiveness of logistics in disaster areas around the world, it is also positioning resources in anticipation of the unpredictable. In a notification posted on the ALAN Web site, tips were offered for volunteer logistics companies to optimize their contributions' impact.

• Don't self-deploy: Avoid disaster areas until volunteers are requested. Emergency response and life safety crews need access to open road to conduct their life-saving activities.

• Connect before you collect: Make sure there is a need—as well as capacity and a specific recipient—for your donation on the other end. Your good intentions can overburden local supply chains if affected communities are not prepared for the arrival of your goods or services. Requested items will be posted on the ALAN Web site.

• Work through ALAN: The organization partners with voluntary organizations, communities and emergency response agencies on the ground to provide an organized response.

• Cash is best: By far, monetary donations are the most useful help you can give. They allow affected communities to purchase exactly what they need, when they need it most; they permit local sourcing of supplies, which stimulates the economy and keeps tax revenues at home; and they help survivors to take control of their own recovery.

In the wake of U.S. tornadoes, ALAN offers tips for volunteer logistics companies to optimize their contributions' impact.

Skill is moving inventory from here to there.
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Will is doing it before they ask.

Skill is knowing how to fix a truck.
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Skill is expediting a shipment.
Will is getting it to a secret government location.

Skill is moving a family.
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A fleet won't take care of itself. Or, will it?

Connected devices offer an opportunity to optimize themselves, driving productivity and efficiency without human intervention.

By Josh Bond, Associate Editor

Fleet management, broadly defined as collecting data to improve efficiency, faces one key obstacle: making sense of all that data. The best solutions are able to rapidly distill information about labor, equipment or processes into actionable intelligence. Some even collate all three at the same time. Many fleet managers see significant gains from visibility that replaces gut feelings with optimal decisions—but they still have to make those decisions.

Lew Manci, director of product development for Crown Equipment, says a rising trend in mobile computing is working to remove managers and operators from the minutiae of managing a fleet by allowing the fleet to manage itself. The concept is central to the vision of "The Internet of Things," in which connected devices like smart phones, lift trucks and mobile computers communicate in parallel without human intervention. Luckily for industry, many of these device interactions are being proven out in the consumer space.

"We foresee the use of consumer mobile devices will enable the integration of disparate tasks with multi-modal functionality," Manci says. "Picking productivity, labor management, fleet management, and directed workflow will all operate on common devices. That integration means these functions are not just running on the same device but each application interacts and shares information with the others to enhance value."

The penetration of consumer devices into lift truck fleet management is nascent and has taken many forms—from bring your own device (BYOD) to the deployment of consumer tablets in ruggedized cases.

"A $200 Android tablet is essentially a throw-away device. Even if you get less than nine months of use it's still a lot less costly than proprietary terminal for $4,000," says Manci, who suggests the historic mentality of "set it and forget it" in fleet management is not a best practice. "From a technology perspective, it's probably a better approach to get through the next six months as opposed to looking for a solution that lasts six years. Technology evolves so quickly that another advantage of consumer products is the ability to migrate across the evolution of that technology in a better way."

While even basic tablets are loaded with sensors and features, the low cost also helps target the most valuable fleet data. A consumer-based platform provides the opportunity to deploy "apps" instead of traditional monolithic software deployments, Manci adds, not to mention that employees' familiarity with the interfaces eases training time.

"We hear customers talk about being overwhelmed with data, but it's possible to pursue slices of data and incrementally move in that direction," he says. "If you are considering a transition to mobile devices, think about the tools available and your specific needs."

Josh Bond is Modern's *associate editor and can be reached at jbond@peerlessmedia.com*

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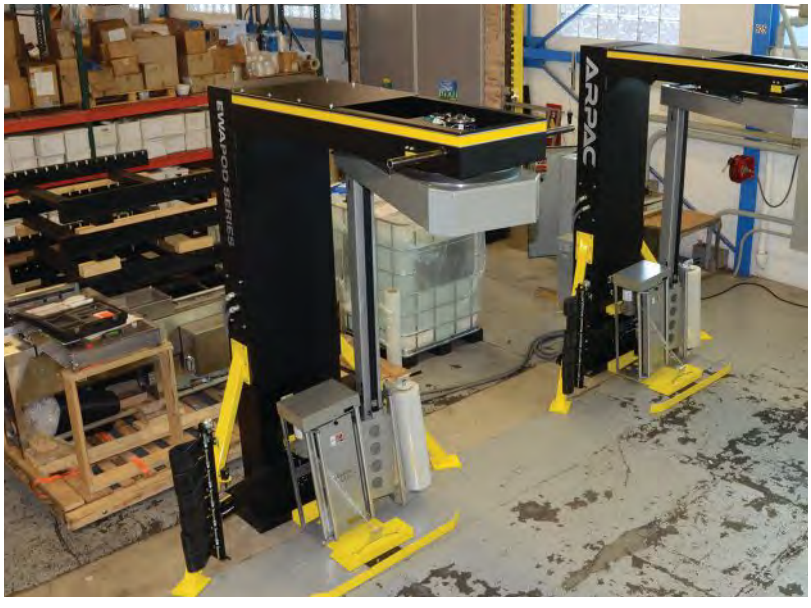
Uptick in automated stretch wrapping yields greater productivity, cost reductions

A transition to automated equipment is being helped by a steady reduction in price as well as a gain in functionality.

By Sara Pearson Specter, Editor at Large



Distribution centers handling virtually every kind of product are implementing more automated stretch wrapping machines than ever before, says Mike Schoenberger, product manager of ARPAC's stretch machine group.

"It's a marked transition from hand-applied stretch wrapping," he explains. "Companies have become better educated about how to apply the stretch film to maximize load containment."

This transition marks the latest evolution in pallet load restraint, Schoenberger says. Just a decade ago, companies moved from strapping (and other means) to secure a load to a pallet to wrapping stretch film around the load by hand.

Stretch film tightly unitizes a load, thanks to its continuous attempts to contract back to its unstretched state, he adds. However, "the strongest containment forces simply can't be achieved by a person. An operator with a roll of hand wrap can only get maybe 10% pre-stretch, whereas a machine can easily reach 200% to 300% pre-stretch," Schoenberger says. That higher percentage of pre-stretch also means less film is required, resulting in significant cost savings.

Many DCs learned that lesson the hard way, when hand-wrapped loads came apart in transit and the contents returned as damaged goods. In addition to the cost of returned, unsalable merchandise, hand wrapping by operators as they complete their picks, cuts into lines-per-hour-picked productivity, he adds. "It can be physically demanding to hand-wrap a load, because it requires bending, stretching and reaching," he says. "Those actions can lead to injuries, down time and OSHA recordable incidents."

In addition to the cost savings, the automated equipment itself has steadily dropped in price while gaining in functionality. Today's machines can easily be pre-programmed to adjust film delivery tension to match the requirements of each unique load. Although the pre-stretch film amount is the same, dense products require a tighter application of film, while lighter, more delicate items (or cardboard cartons that aren't completely full) require less as to not crush the load.

Understanding and establishing each DC's unique force-to-load profiles is a critical point of the user education process, Schoenberger says. "Some companies are so excited about the switch over to automation that they don't take enough time for testing and learning how to wrap each load before flipping the switch."

Sara Pearson Specter is an editor at large with Modern *and can be reached at sara@saraspecter.com.*

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Tech Data asks: What's next?

One of the world's largest wholesale distributors of technology solutions rolled out a WCS, WMS and labor management across six U.S. distribution centers to keep up with demand.

By Bob Trebilcock, Executive Editor

Editor's Note: When it comes to materials handling and order fulfillment, the action is no longer focused on equipment. Instead, software and information technology is transforming and optimizing operations. The following story on how Tech Data, one of the world's largest wholesale distributors of technology and solutions, rolled out a warehouse control system across its network of DCs is the second in our series of System Reports focused on technology. Last month, we looked at how the Wyoming Liquor Division is using voice technology in its new DC. We end the series in July with a report on how Diversity Vuteq implemented a highly visual WMS operating on iPads to deliver perfect orders to automakers. Perhaps these examples will encourage you to look for areas in your own operations where technology or software can make a difference.

What technology does it take to provide a consistent and efficient customer experience across a network of distribution centers? That was a question posed several years ago by Tech Data, the world's largest wholesale distributor of technology and solutions.

At the time, Tech Data was managing its North American fulfillment activities with paper-based legacy systems. Aging warehouse systems were a contradiction for a company that delivers the latest IT hardware and solutions to its customers. At the same time, Tech Data prides itself on something Darryl Branch, senior vice president of logistics and integration, calls an attitude of constant transformation. He says, "We are constantly looking at what other technologies can be applied to our business and asking: What do we do next?"

What's next for the logistics centers—Tech Data's term for its DCs—was the roll out of a common warehouse control system (WCS; Fortna,

fortna.com) one facility at a time across a network of six U.S.-based logistics centers. The multi-year project was completed last year. The WCS provides real-time control and visibility into the status and location of orders as they travel through miles of conveyor and sortation, including the all-important "priority" orders scheduled for next-day or two-day delivery. Since going live, on-time delivery rates have improved from 99.6% to 99.9% for priority orders, while meeting on-time delivery rates of 99.999% on standard delivery orders.

WCS was not the only technology update. In 2007, prior to the WCS roll out, Tech Data went through a network-wide warehouse management system (WMS) implementation. And, after launching the WCS project, Branch's team also took on a labor management system (LMS) and employee incentive program. The ultimate goal is to be the industry leader on customer service while enjoying the lowest logistics costs

A warehouse control system is providing a new level of visibility and performance at Tech Data's six U.S.-based distribution centers, according to Darryl Branch, senior vice president of logistics and integration.

Photos by Shannon Faulk/Getty Images

The WCS routes orders from the pick modules to the right shipping lane (left), based on priority. In packing (right), an associate adds paper to a carton prior to shipping.

among its competitors.

So far, the technologies are delivering results. In addition to improved on-time delivery, labor costs are down, the number of full-time equivalents has been reduced from 1,100 to 500, and throughput has improved from 45 pieces per labor hour to 70 pieces per labor hour. "We've been able to improve our metrics every year since we implemented the WCS, WMS and labor management," Branch says.

Launching WMS

With more than $26 billion in revenue and 9,000 employees worldwide, Tech Data is ranked No. 119 on the *Fortune 500* and is consistently one of *Fortune*'s most admired companies. It distributes and resells approximately 150,000 high-tech products for HP, Dell, Microsoft and others in North America, South America, Europe, the Middle East and Africa, and supports approximately 115,000 value-added resellers, direct marketers, retailers and corporate resellers in 100 countries. The list of offerings includes computer peripherals, physical security, consumer electronics, digital signage and mobility hardware. It also provides services ranging from logistics management to training and technical support, customized shipping documents, product configuration/integration and access to flexible financing programs, as well as a suite of electronic commerce tools including Internet order entry and electronic data interchange services.

Order fulfillment and distribution are core competencies and competitive differentiators, according to Branch. In the United States, Tech Data operates a network of logistics centers comprising more than 2 million square feet, including Miami (273,000 square feet); Suwanee, Ga. (196,000 square feet); Swedesboro, N.J., (407,000 square feet); South Bend, Ind. (347,000 square feet); Fontana, Calif., (407,000 square feet); and Dallas/Ft. Worth (535,000 square feet). A seventh facility in the network is located in Costa Rica.

Today, the facilities use mobile computing and bar code scanning to direct work and ensure quality; more than 22 miles of conveyor feed high-speed sorters that route the correct orders to the right trucks to meet customer service levels; and labor management is used to create consistent work standards, provide objective metrics to measure associates and compare productivity across facilities. The facilities are clean, well-organized and consistent. "We believe that one of the keys to our success is having as much consistency as possible in how we operate our systems and how the logistics centers are measured against each another," Branch says.

While the buildings are relatively new, as a 40-year-old company, they were managed by aging legacy software systems. The quality of those systems varied from one facility to the next and depended on how much was available to invest at the time a building went live. Increasingly, Tech Data was challenged by changes taking place in the types of products it was handling, smaller order profiles and increased customer service-level requirements.

For instance, the product mix expanded beyond conventional IT products to include toys, printers, copiers and asset tagging for configuration centers. E-fulfillment resulted in more small orders and more each picks. Priority orders were increasingly a competitive differentiator. "In a business where our

competitors all offer the same SKUs, a customer may decide who to use based on how efficiently we can ship an order on time," says Branch, adding that a customer will typically pay more for higher service levels. As a result, the ability to deliver on priority orders is a key metric when it comes to evaluating how well the company is performing.

The first step at modernizing the facilities came in 2007. After implementing SAP WM in its European facilities, Tech Data went live with the WMS across the United States. While order selectors could pick orders without paper and get them onto the conveyor system more efficiently than in the past, the existing WCS systems couldn't track the status or location of orders—especially priority orders—as they traveled on the conveyor and sortation systems. The subsequent processes involved a lot of manual intervention, inefficiencies and the potential for errors because the WCS could not differentiate priority orders from regular orders.

To compensate, Tech Data developed manual workarounds to visually track orders. When a priority order dropped into the system, it was picked into special red totes and placed on the conveyor line. Associates were then stationed on the floor to manually divert the red totes to the right lane for next-day or two-day shipment. With a reliance on manual diverts, it's no surprise that some orders ended up in the wrong trucks, impacting service levels. "We had a lot of manual effort, even though we'd put in a sophisticated WMS system," Branch says.

High-tech tool for a high-tech company

It was clear that the company needed a high-tech tool to match its high-tech requirements. "We realized that to get the full efficiency out of our WMS, we had to have smart conveyors powered by a WCS," Branch says. "Otherwise we were going to have a lot of automation that still relied on people." Moreover, they wanted one technology platform that would provide a consistent way of operating across the network, even if the conveyor systems were different.

Having just gone through a major WMS roll-out and a lot of change management, Tech Data took a step approach to the new WCS, rolling the system out one facility at a time starting with the DC in South Bend. The idea was to learn how to run and maintain the new system, including the dashboard for the control system. An additional goal was to identify best practices and develop several super users in each facility who could apply lessons learned to the next implementation. It took five years to get all of the U.S. facilities up, running and experienced on the WCS—the last went live in 2013.

The outcomes were impressive. Thanks to the WCS, Tech Data could now track priority orders as they progressed through the order fulfillment system and ensure they were automatically sorted to the right shipping lane for the customer service level. Manual intervention and red totes were things of the past. More importantly, the sophisticated systems enabled Tech Data to look at its business more strategically and to add more value for customers.

"We saw an improvement in throughput and accuracy," Branch says. "But we also gained visibility into how orders flow through the facility. That allows us to understand when trucks need to leave to meet next-day or two-day delivery."

In turn, Tech Data can now provide a better customer experience than in the past—and do so more economically. Moreover, by operating on common platforms, the network of DCs collaborates on best practices and standards across the sites. Finally, the company thinks more strategically about how inventory is positioned across the network and what type of orders are filled in each facility. As an example, a significant percentage of smaller orders have been shifted to the Dallas/Fort Worth facility, especially those shipped in envelopes.

In addition to the WCS, Tech Data has rolled out labor management across its facilities to drive further improvements.

Improving labor standards

Tech Data took the same "one facility at a time" approach with labor management, rolling it out concurrently with the WCS system. "To get the most from the WMS, we wanted a common set of labor standards across all of our facilities, just like our common software platforms," says Branch. The new software and engineered labor standards were accompanied by an employee incentive program. Last year, every employee, including temporary employees, received a bonus. This year, bonuses are paid every two weeks.

Labor management had two impacts. For one, there was a nearly 60% reduction in the number of full-time equivalents along with the increase in throughput. Just as important, morale has

improved. "With labor management, our employees understand how they're being measured and rewarded," Branch says. "It's really improved the mindset of our people."

Branch adds that other companies have taken notice of its systems. In fact, Tech Data is now providing third-party logistics (3PL) distribution services. "They're looking at how we manage our labor, how we manage our inventory and at our commitment to continuous improvement," Branch says. "We have made investments that they don't have to make in their facilities if we manage their distribution."

"Since launching this initiative in 2007, we have clean, organized buildings with high morale," he adds. "We've brought consistency to our operations and measurements across our network. And, we continue to look at what technologies can be applied to our business. We continue to ask: What do we do next?" □

Taking WCS to the next level

WCS is transforming operations at Tech Data's Fort Worth, Texas, facility

Tech Data
Dallas/Fort Worth facility
Fort Worth, Texas

SIZE: 535,000 square feet
PRODUCTS: Information technology equipment
SKUs: 40,000
THROUGHPUT: 4,000 orders per day
EMPLOYEES: 120
SHIFTS PER DAY/DAYS PER WEEK: 3 shifts per day, 5 days per week

Tech Data's 535,000-square-foot facility in Fort Worth, Texas, is just one of six U.S.-based distribution centers. However, it is a good representation of how a warehouse control system (WCS) is synchronizing warehousing and distribution activities in the DCs.

Receiving: The facility deploys two processes in the receiving area: One is for small parcel receiving (1) from the likes of UPS and FedEx, and the other is for palletized LTL and truckload deliveries (2). The facility receives approximately 450 small parcel containers and about 350 pallets of product each day.

Small parcel receiving (1) begins with a validation of the number of parcels in the container against the packing slip. A receiver then keys a purchase order (PO) number into a mobile computer to access the purchase order in the enterprise resource planning/warehouse management system (ERP/WMS). The receiver confirms the items and quantities against the PO.

Once validated and received, a second associate prepares the shipment for putaway in a small parcel processing area (3). The associate scans a bar code on a receipt slip. The WMS assigns the item to a storage location, which generates a bar code label for each putaway item. The associate applies the bar code labels and aggregates items into totes that are now ready for storage.

Receivers in the LTL and truckload receiving area (2) follow a similar process—they're just dealing with larger units. Once validated, full and partial pallets are labeled and staged (4) at an induction point at the end of the aisle designated for putaway.

Putaway: In the small parcel processing area (3), totes are inducted onto the conveyor system (5) that feeds three-level (6) and single-level (7) pick modules. When they reach the designated storage area, cartons are removed from the totes and scanned into the appropriate storage location. Empty plastic totes are recycled through the system for use on other receipts.

Pallets ready for storage are picked up at an induction point by a wire-guided turret truck and scanned into a reserve storage location in a narrow-aisle storage area (8). Large items, like printers and televisions that will be shipped in their original packaging are stored in conventional wide aisle and bulk storage and picking areas (9).

Picking: The Fort Worth facility uses paperless and paper-based picking, depending on the type of product and order being picked. Both types of orders are system-directed by the ERP/WMS system.

Repack picking: Items that are repackaged for shipment are picked to totes in a three-level (6) or single-level (7) pick module. When the orders are released by the WMS, they become visible to order selectors on their bar code scanners. After arriving at a pick location, the order selector scans the product and, if necessary, a serial number, to confirm the location. The system then indicates how many items to pick to a tote. Once the order selector completes the picks in that zone, the tote is placed on the conveyor and routed to another pick zone or to the packing area (11). In all, there are 26 possible pick zones.

Original packaging picking: Large items that will ship in their original packaging are picked to a pallet. After being directed to a picking location in the wide aisle pallet storage area (9), the order selector scans the item to confirm the location and then picks the right quantity to the pallet. When all of the picks are complete, the pack-

System suppliers

WAREHOUSE CONTROL SYSTEM: Fortna, fortna.com
ERP, WMS, LMS: SAP, www.sap.com
CONVEYOR AND SORTATION: Hytrol, hytrol.com
TURRET AND WALKIE LIFT TRUCKS: Crown, crown.com; Raymond, raymondcorp.com
MOBILE COMPUTING AND SCANNING: Motorola Solutions, motorolasolutions.com
RACK AND SHELVING: Elite Storage Solutions, elitestoragesolutions.com

ages are loaded onto a conveyor (10) and routed to a centralized packing area (11) for those items.

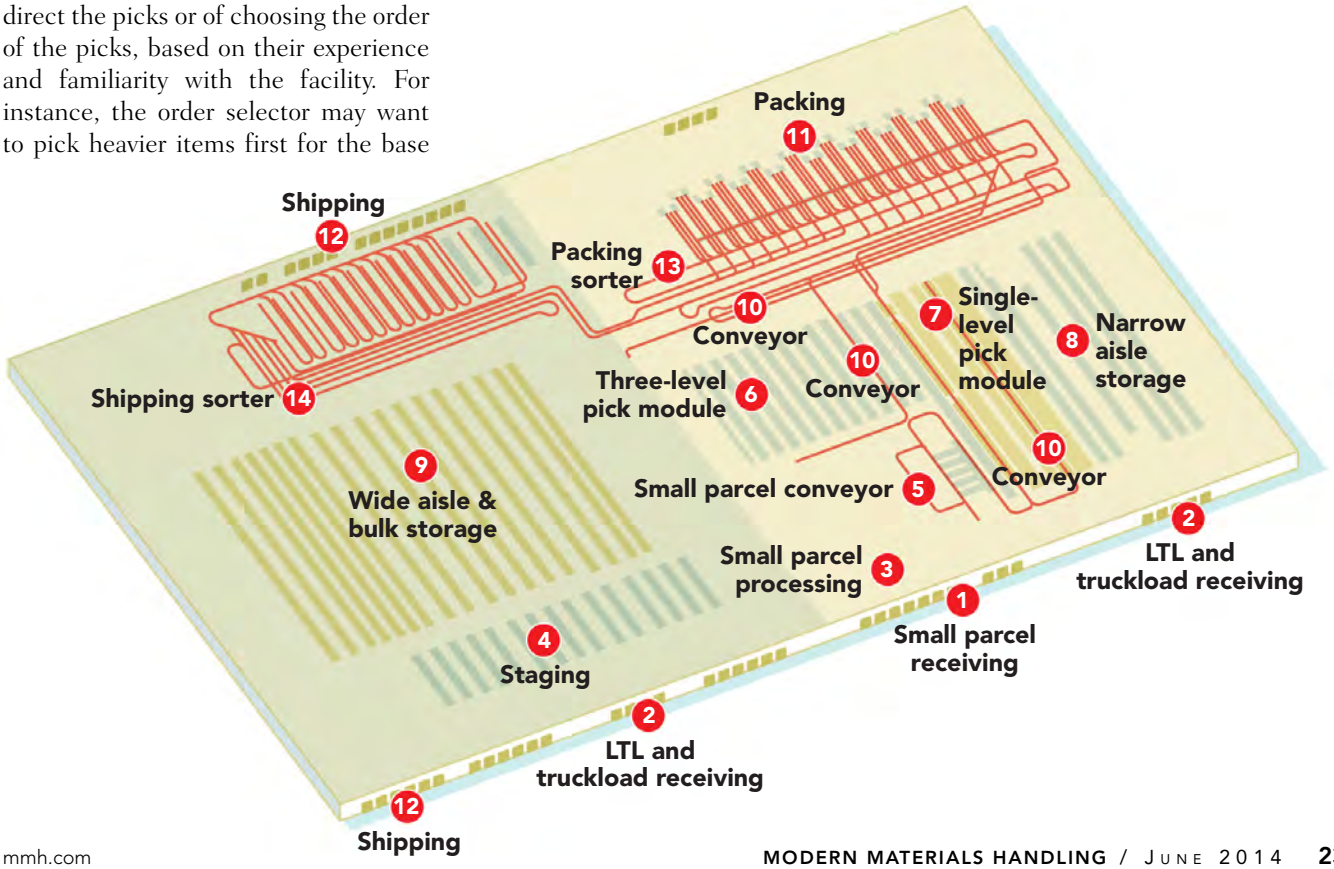
Batch picking: The system is also designed to consolidate, or batch pick, when a large number of one SKU has been ordered. Batching occurs when multiple orders call for the same SKU. The order selector is directed to a location in the pick modules (6, 7) for that SKU and picks the number indicated to a tote. Once picked, the tote is conveyed (10) to the packing area (11) where it is debatched into individual orders.

Paper-based picking: The above processes are designed for parcel shipments. The Fort Worth facility also uses a paper-based picking process for LTL and truck load shipments. In those instances, paper pick tickets are distributed to order selectors who pick from the narrow aisle (8) and wide aisle (9) storage areas. The pick tickets include a scannable bar code. Order selectors have the option of letting the system direct the picks or of choosing the order of the picks, based on their experience and familiarity with the facility. For instance, the order selector may want to pick heavier items first for the base of a pallet. To confirm the pick, the order selector scans the location and the product before picking it to the pallet. Once the pallet is complete, it is delivered to the shipping dock (12). There, it will be packed and stretch wrapped by a packer on the dock.

Packing/shipping: When a tote arrives at the pack area (11), the packer scans the bar code and views the order on a monitor at the pack station. If the quantity picked matches the quantity ordered, the system generates a shipping label; if the order is complete, the system also generates a packing slip. Next, the system determines the most appropriate box size for shipping. After loading the box, the packer applies the shipping label to the container. It is then conveyed to a central void fill area where paper is added to the container. It is then automatically sealed and conveyed by the packing sorter (13) to the shipping sorter (14) where it is scanned by an overhead scanner and sorted onto the outbound truck in shipping (12).

Orders shipping in the original packaging are scanned to generate the packing slip and shipping label. After applying the label, the items are placed on the conveyor, scanned by an overhead scanner and sorted (14) into the outbound truck (12).

Pallets are staged on the shipping dock (12). A packer scans a bar code to bring up the order on a mobile computer. With that information, the packer builds the pallets for an order. Once that is complete, the system generates a packing list and shipping labels and the pallet is loaded onto the outbound truck. □



5 ways to handle PEAK DEMAND

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

By Bob Trebilcock, Editor at Large

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

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

Those seasonal peaks were predictable thanks to historical data from previous seasons. The same held true for how orders rolled through the facility during a typical day. "It used to be that orders flowed in during the first shift, we picked them on the second shift, and we shipped them on the third shift for next-day delivery," Stark says.

But, little is predictable about business today. "People go on the Internet when they get home from work," says Stark. "In the morning, we have a slew of orders that came in overnight. Meanwhile, I'm likely to get a bunch of orders between 3 p.m. and 6 p.m. that have to get picked to meet the UPS cut-off time."

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

United Stationers' experience is far from unique. Retailers, e-tailers and distributors alike are struggling with peaks in their operations. Like with United Stationers, some are challenged by same-day shipping and next-day delivery. Some are dealing with the slew of promotions common to e-commerce marketing strategies. Still other retailers are now dealing with non-traditional holiday peaks. "We have customers who deal with peaks at Halloween and Cinco de Mayo," says Mike Khodl, vice president of solution development for Dematic. A retailer selling camping and hiking gear may get hit around Memorial Day, the start of the camping season. "I just ordered three kayaks online," Khodl says. "Once, I would have picked those up in the store. Now, they have to be packed in a warehouse for home delivery."

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

While automation may be part of the solution, managing peak is more often a combination of clever staffing and flexible processes enabled by technology. These solutions allow a user to flex up or down very quickly. Fanatics, for instance, forgoes reserve storage: Instead, all incoming inventory is placed into totes and stored at a pick face. Meanwhile, United Stationers relies on voice-enabled picking and a conveyor system. "The voice system monitors the performance of our associates, which allows us to easily move multiple people into a zone as needed, while the conveyor routes an order to all the zones required," explains Stark. "I have to have that flexibility."

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

1. Think about your picking strategies

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

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

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

Managing peak demand often relies on a combination of manual process and enabling technologies such as voice or pick-to-light.

2. Design below peak

When you design a new church, the saying goes, you build the sanctuary for Easter Sunday, even if many pews are empty the rest of the year. That's designing for peak. In a distribution center, it's more common to design below peak, says Andy Williams, senior business development manager for Vanderlande Industries.

That's an approach Urban Outfitters, one of Vanderlande's customers, took when it developed a new multi-channel facility that manages full- and mixed-carton orders for wholesale customers, store replenishment, and direct-to-consumer e-commerce orders. Each of those channels has its own rhythm and peaks. "The wholesale side of the business has an end of the month peak and is quiet for the other three weeks," Williams says. "Retail has multiple peaks, including seasonal and promotional peaks, while e-commerce can have peaks within a shift. The challenge was to find the sweet spot across those three channels."

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

Mobile put walls are a scalable solution that can be used to create a temporary order fulfillment solution during peak periods.

Full cartons may be sent to a put wall system or they may bypass sortation all together and go straight to a pallet-build area to create orders for stores. Mixed carton orders for wholesale customers and stores are filled in a "rebin" area, where a put-to-light system directs the carton-building process. The retailer's warehouse management system (WMS) has the ability to create waves within order waves to handle priority or rush orders during peak times.

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

3. Be flexible and scalable

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

Khodl advocates a highly automated picking engine to handle everyday demand, such as a cross-belt sorter or goods-to-person picking solution, enhanced by a semi-automated or manual solution to handle peak demand. Those may include a light-directed mobile put wall or voice-enabled picking. "We're not bolting a lot of automation to the floor for peak," Khodl says. "Instead, we're relying on software to manage inventory, orders and enable picking."

One solution is to use a conveyor

WMS software can create orders within waves of orders. This enables DCs to fill priority orders first to meet crucial shipping cut-off times.

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

Khodl adds that peak demand

6 ideas to shorten peak response time

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

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

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

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

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

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

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

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

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

impacts all of the functional areas of the warehouse, from receiving to shipping. "You may have to devise new strategies to receive during peak or deal with the out flow to meet order cutoff times for parcel carriers," Khodl says. "You may have to store more at the case level than the pallet level to react to the demand for piece picking. A conventional very narrow aisle pallet pick system is just too slow for daily demand peak."

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

4. Use automation wisely

Many facilities add extra employees or extra shifts to handle peaks. That, however, isn't always practical, says Kevin Conner, director of system sales for Chicago-based World Source. "We see companies automating those areas where it's too crowded to add more bodies or that become bottlenecks," says Kevin Conner, director of system sales. The addition of automatic taping lines in packing, for instance, limits the amount of labor required to get orders out the door and clears up a bottleneck in processing.

It's important to use automation wisely to manage peak. One potential solution is using automation to replenish carton and case flow lanes to minimize labor.

Conner looks for simple ways to

Flexible work rules and creative staffing are a first line of defense when it comes to managing peak. The best facilities cross-train key employees for all functional areas in the DC.

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

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

5. Realize it's all about staffing

Today, Jim Kitts is a director with The Progress Group, a design and consulting firm. In a previous life, he experienced peak demand as an operator at two nationally known retailers. He viewed peak first and foremost as a staffing issue. He worked with HR to develop flexible work rules to address these peak periods with the workforce. For example, in addition to full-time staff, he developed experienced part-time workers who worked a 9 a.m. to 3 p.m. shift or three 8-hour shifts a week. If a DC was unexpectedly hit with orders, he would start by asking his full-time employees to work a 10- or 12-hour shift. Next, he would ask those part-time workers to work a full 8 hours or to work a fourth day.

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

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

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INTELLIGRATED: intelligrated.com
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UNITED STATIONERS: unitedstationers.com
VANDERLANDE INDUSTRIES: vanderlande.com
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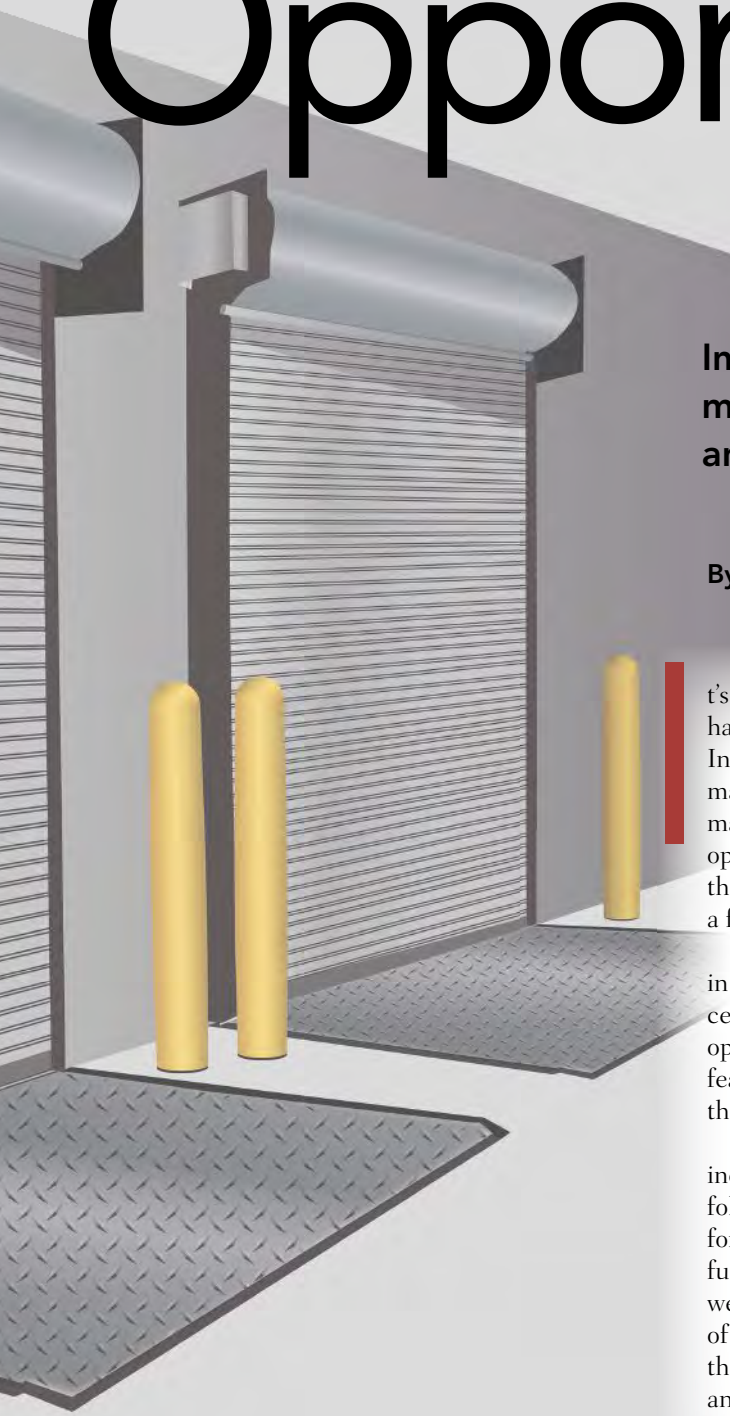

Incremental changes and simple maintenance can ensure the productivity and safety of operations at the dock.

By Josh Bond, Associate Editor

It's no secret that some of the world's most impressive organizations have historically relied on manual systems for dock operations. Industry leaders at process efficiency inside their buildings are still manually spotting trailers and managing door traffic or using home-made software to orchestrate tasks. A larger concern is that entire operations are often supported by equipment that does not enjoy the same level of care as other pieces of production equipment in a facility.

Located just beyond the dock door—which might as well be in another continent as far as many siloed organizations are concerned—dock and yard equipment are subjected to the elements, operated by employees, drivers or both, or assumed to be a fixed feature. For instance, once a door, lift or leveler has been installed, the tendency is not to revisit how it can be improved.

But substantial gains in these areas are possible, according to industry experts, whether by tweaking something a few inches or folding line-to-yard operations into a single, semi-automated platform. "There are significant opportunities for both productivity and functionality improvements, opportunities far greater than they were just five years ago," says Steve Sprunger, senior vice president of sales and marketing for Entrematic. "In recent years, between the downturn and general frugality, we're seeing that the warehouse and the dock are getting a lot more attention."

Not to mention that persistent safety concerns around the dock are always worth targeting. Matt Clemens, director of engineering

at the dock

for Vestil Manufacturing, says many of Vestil's customers are driven to them after an incident or OSHA visit. He advises against that reactive approach. Working from the yard entrance through the door and into the facility, this article will explore a range of proven and emerging dock technologies that can keep workers safe and product moving.

Lights for both illumination and communication might be sequenced by a central system along with restraints and doors.

Red carpet rollout

Docks have traditionally been reactionary places. After all, given the realities of over-the-road transportation, it can be hard to know how best to use dock resources at any given moment. But this assumption ignores the fact that trailers are often staged in the yard for some amount of time before they hit the door—where their arrival should not be a surprise. There's no reason why valuable information can't be gathered as soon as a vehicle comes within range of a facility, according to Sprunger.

"More people are looking to connect the dock to the yard," he says. "GPS can track a trailer on the road, and warehouse management controls assets inside the building, but there has rarely been a solid tie between the two."

Passive RFID tags for trailers can help, whether applied to a captive fleet or affixed upon entrance into the yard. "While that trailer is anywhere in the yard, the system will know about it," Sprunger adds. "It can direct the yard jockey much better while enabling indoor systems to prepare not just for the physical trailer but also its contents. It's a lot more helpful than 'a trailer is coming between 8:00 and 12:00.' "

In real time or cumulative reports, indoor operations can assess where a trailer is parked, what's inside, how long it's been there, what needs to be unloaded and where it needs to go, or vice versa. Many full truckload clients are trying to figure out any way to maximize the cube inside the trailer to attack freight costs, says Walt Swietlik, director of customer relations and sales support for Rite-Hite. In addition to better information, customers are finding they need better access to the trailers to boost productivity and reduce product damage when loading or unloading, he says.

A move toward just-in-time deliveries might prompt some facility changes, Swietlik says. Instead of 20 docks on one side of the building, a customer might like to shift receipt for, say, steering wheels to an area adjacent to

where wheels are installed. "They're ready to blow a hole in a building where needed," Swietlik says. "More than ever, customers are focusing on general dock design and layout. They're taking a hard look at dock height and dimensions and in many cases are breaking from the norm."

A difference of just a few inches in the dimensions of dock openings or equipment can significantly impact productivity, safety and equipment life.

Coming through

Historically, trailers were only 8 feet wide and married nicely with dock doors 8 feet wide and 9 feet tall. Today's trailers are 8.5 feet wide and instead of an 80-inch-wide load many now prefer to ship 96-inch-wide loads, Swietlik says. A trailer's full load could shift from 27 to 30 pallets in this case. Or, if it's possible to turn both pallets to their 48-inch side, Swietlik says a trailer will gain six pallet positions—12 more pallets if stacked.

Trailer and door width can make or break efforts to use a single-double attachment, but the door isn't the only thing in the way. A lot of older buildings have higher dock heights of 50 to 52 inches, when trailer beds are coming in at 46 to 48 inches off the ground. Similarly, Swietlik says, classic dock levelers 6 feet wide by 8 feet long are increasingly replaced with dock plates as wide as 8.5 feet and 10 to 12 feet long.

Whatever its size, the trailer's connection with a door includes a number of safety concerns. The absence of dock locks, vehicle restraints or pedestrian or forklift guarding around unused doors is common, and even if

Loading plate fills trailer in less than 5 minutes

Automated solution works with a wider variety of trailers and containers.

Previously shipping high-volume bagged and palletized product on custom platforms, a petrochemical company faced a challenge converting to standard containers. Platform loading was a manual operation prone to unexpected costs and product damage from lift truck handling. The installation of a trailer loading plate enabled the company to load an entire trailer in a single movement while reducing labor.

Most available solutions that met the company's high production rates required customized shipping containers or flatbed trailers equipped with rollers. These solutions worked for closed, dedicated loop shipments such as plant to plant, but not for intermodal shipping.

The surface of the new load plate (Actiw Oy, loadplate.com) is an industrial-sized slip sheet rated to handle full container loads onto any cargo bed surface.

Today, line-dedicated load plate units are fed from the automated bag palletizers, which continually feed live roller pallet conveyors providing high throughput rates onto the loading plate. Peak rates are up to three container loads per hour per unit, and a loading cycle takes less than 5 minutes. The customer was able to go from one packaging line operator and four lift trucks per line to just one line operator.

The loading plate's top has embedded gravity rollers that allow the pallets to migrate onto the sheet. When the load plate is fully loaded, the plate is driven into the container or onto the truck bed in one shot. A hydraulic ram on a load position-sensing drop gate provides the final positioning and the load is ready to ship.

Management notes the reduced chance of injuries and accidents by workers, and reports zero product damage compared to past estimated damage of 0.05% of the total volume. Because the system is connected to packaging lines and installed within the facility, the company no longer needs container loading ramps and additional space outside the building.

such equipment is present, its usage is often inconsistent or poorly monitored. Clemens notes the increased use of automation at the dock, with solutions as simple as wheel chocks connected to interior indicator lights or as advanced as sequenced, interlocking controls that require Step A before Step B is even possible.

Sprunger says visibility is central to the effectiveness of automated dock systems. "If you know a trailer is at Dock 15, you can tell if the door is open, whether the trailer restraint is engaged or if a trailer is ready for release," he says. "This building profile can ensure better dock utilization. One customer cut its process time by two-thirds."

Central control panels for chocks, locks, levelers and lights can even control fan systems in the dock area. "A customer had one control panel for each high-volume, low-speed (HVLS) fan," Entrematic's Sprunger says. "People were constantly adjusting them. They now use software to centralize fan management and pre-program fans for times of day, seasons or real-time temperature changes. This approach is effective for sites with three fans or 30."

Without the need for pits, surface-mounted lifts are becoming more popular—but they still require regular cleanings and maintenance.

The only constant

Seasonal changes in volume impact dock usage, but business conditions are subject to other disruptions. Isabelle Grenon, product manager for GMR Safety, which specializes in the design and manufacture of dock safety and efficiency solutions, says that in the last couple of years she has noticed a tendency for major corporations to transfer operations to third-party logistics providers (3PLs). "This transition impacts equipment suppliers and 3PLs by essentially replacing one customer with another," she says. "Quite often the new customers have entirely different concerns at their docks."

Aside from change, the only constant is the need for effective safety precautions at the dock. For instance, because a closed dock door will immediately yield to a forklift, many users are installing barriers in busy or crowded docks to ensure lift trucks don't go airborne. Similarly, says Clemens, personnel barriers are being installed in applications where doors will stay open for any length of time.

But some operations present much larger problems than an unguarded door. Pete Norden, dock lift program manager for Southworth, offers the example of a customer that used ramps to manually push 2,000-pound hospital beds up onto vans, box trucks and trailers. The customer ultimately replaced the ramp with a lift, and did not have to dig a pit to accommodate it. Norden says many prefer to avoid the cost and permanence of digging a pit as the popularity and capability of surface-mounted lifts increases.

Gavin Page, special project estimator at Autoquip, says suppliers are getting into more custom projects, more than they were even four years ago. In the absence of custom solutions, some customers have gotten creative with their problem solving at the dock. "We had a customer who had built his own lift out of an overhead winch and a piece of plate," he says. "It had no safety features, had been hit multiple times and had even fallen once or twice."

Another customer had simply learned to live with the problems with its lift, which lift truck drivers would drive onto, raise, then drive onto the truck, back out, lower down and return back into the factory. "They were repeating this process 20 to 30 times in the same truck," Page says. "There was only a single lane behind the building that ran perpendicular to the dock, so their options were limited."

The facility's new system includes a lift and ramp that, when lowered, are flush with the ground. The truck drives over both, and the lift and ramp raise together when the truck is in place. In a creative twist, Page describes another customer that fitted a lift to the end of a drawbridge-style ramp. When lowered over nearby train tracks the com-

As the most basic vehicle restraint, chocks can be outfitted with ergonomic handles or wirelessly connected to interior lights and systems.

bination allows lift trucks to come and go as they please.

For this kind of outdoor equipment, improper maintenance can drastically reduce component life, Norden says. "A lift, for instance, can last 30 years if well maintained. Others are dead as a doornail within five years," he says. "Some users have 50-year-old equipment that has not been maintained. People make a short-term investment to take care of a problem then ignore the equipment."

Clemens says poor maintenance tops his list of concerns, citing infrequent cleaning, little or no greasing, or cracked decks from fatigue. "A leveler either works or doesn't, but you don't want it to fail," he says. "They are fairly robust, but components like the ratcheting mechanism on a dock leveler can wear."

Maintenance and visual inspection of rollers, bearings, bushings and cylinders is important, Norden says, as well as an annual oil change. "A lot of customers don't think of dock lifts as production equipment," he suggests. "Inside a facility they think of equipment as key to uptime. But in the back of the facility they just forget it. Machinery doesn't have to sit neglected for very long until it becomes a performance issue." □

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High-speed doors reliably control freezer temperatures

Insulated and impact-resistant doors set the freezer thermostat 6 degrees lower in the first day.

Hansen Storage, a fifth-generation family-owned storage company located in Milwaukee, Wis., operates more than 1 million square feet of warehousing space throughout southeastern Wisconsin.

At its 350,000-square-foot storage facility in Wauwatosa, the company offers dry and cold storage in addition to three industrial freezers. After installing high-speed, insulated doors (Rite-Hite, ritehite.com) Hansen improved productivity and temperature control.

The company's freezers store a variety of products, such as meat, fish and poultry, and range in size from 10,000 to 20,000 square feet. The management team sought to keep 50,000 square feet of freezer space cold despite constant in-and-out traffic.

"When the old freezer door would open, it was like a wind tunnel coming out of the freezer. It was difficult to maintain temperature control," says president Peter Hansen, who doesn't miss the old doors' frequent downtime. "This is a fast-paced environment, so we're very tough on doors. We were constantly fixing our old door, which meant additional costs."

The new door can take an impact from a forklift, safely break away and automatically reset itself without human intervention. It is also able to open and close quickly despite heavy forklift traffic. A variable-frequency drive allows the door to operate at speeds up to 100 inches per second. An insulated barrier between the freezer and door tracks eliminates drafts and ensures a consistent R-value from top to bottom.

The company lowered the temperature in its freezer by 6 degrees within the first day after installation. "This door will pay for itself within a year or two," Hansen says. "We have two other freezers in our facility and we're planning to put high-speed doors on those as well."

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Light-directed

activities enter the third generation

Mobile lights-based systems can deliver the functionality of lights to the product or task.

The first generation of light systems sought to improve accuracy; the second generation enhanced speed; and we're now entering the third, which is all about efficiency.

By Josh Bond, Associate Editor

Widely used for fulfillment since the early 1980s, the pick-to-light market was recently considered mature before software, hardware and industry developments opened a frontier of new opportunities. The broadening umbrella of light-directed activities now includes pick-to-light, put-to-light, put walls, picking carts, hybrid voice/light systems, mobile and rapidly reconfigurable solutions.

Real-time communication is the key to light-enabled systems, says Ron Adams, senior vice president of software and controls solutions for Wynright. "The back-and-forth data flow and visibility into labor standards and order management provide the main return on these projects," he says. "Users who were making decisions based on a gut feeling can now make informed decisions."

Light systems are most commonly used in picking large volumes of small-sized products, broken cases or fast-moving items. Lights have proven valuable in high-speed piece pick operations with a very high SKU density in the forward pick area, but they also have applications in full case pick and pallet picking. Chris Castaldi, director of business development at W&H Systems, says "if you find that 20% of your products or SKUs require 80% of the picking labor, a pick-to-light system would improve your productivity and accuracy."

The next generation arrives

Castaldi says the first generation of light systems sought to improve accuracy; the second generation enhanced speed; and we're now entering the third, which is about efficiency.

Joe Pelej, marketing manager for Lightning Pick Technologies, a division of Matthews Fulfillment Systems, agrees. He describes a customer with a legacy pick-to-light system that had been doing classic pick-and-pass zone picking with a team-based approach. The company used to build master

Lights can collect information about operators to inform labor standards or perform dynamic reassignment.

packs to send to another DC that broke them out and sent orders to individual customers, Pelej recalls. The company's business model changed, and it decided to do the direct-to-customer orders in the pick-to-light area. "Only now they can switch on the fly from zone picking to batch or cluster picking, whatever makes sense from day to day," he says. "The same system can support different techniques and methodologies, and the ability to be able to make that change-over in minutes is pretty huge."

These capabilities are rooted in software, which can now process much more than binary inputs. But, as with any information system, a company coming from low visibility to high visibility should be prepared for some powerful insight. "They might be working off engineered labor standards (ELS) that are way off base," says Eric Cameron, vice president of sales for Bastian Software Solutions. "Whether in manufacturing or order fulfillment processes, a light-enabled operation might find a bottleneck they didn't know they had."

It's also a question of what is happening downstream of the lights. "Lights, voice, what have you, is just one part of an overall fulfillment process," Cameron says. "If it's feeding a sortation system, that plays into the solution design. Does it feed into a print-and-apply solution where you might be able to put full cases on the line and use scanning and print and apply for outbound shipments? Are there any value-added services you have to do during the pick? All those little nuances lead to the right solution."

Cameron cautions against shortcuts. Before a company can know if lights or any other solution is right for its operations, it needs to know where it is today and establish some kind of baseline. "Many don't know their productivity, pick accuracy or lines per hour," he says. "Then a prospective supplier says a system costing so many thousands of dollars will provide a certain ROI. How could they know?"

Illuminating productivity

As middleware between the warehouse management system (WMS) and picking operations, light software can collect details in ways the WMS might not. For instance, a picker might trigger replenishment when a broken-case SKU is below 10 pieces. "The WMS knows a case of 20 was scanned into that location, but doesn't necessarily care what has happened since," Pelej says. "Light software can trigger corrective actions based on the availability of more information in real time."

Whether using a few lighted bins or a blend of light-enabled processes, a user can gain visibility into the effectiveness of a picker, zone, facility or network. Pelej says the software does not simply collect this data but can use it to create work plans and balance workloads on the fly. "If one person picks 650 per hour, one picks 700 and another picks 750, the system can tell you how best to line these folks up at a station to optimize their performance," he says.

Workers can manipulate orders to see which have launched, completed or are accurate, but the system can also inform staffing levels, track progress against benchmarks and recommend adjustments. Without the ability to dynamically reassign labor, Castaldi

Once based on simple on/off lights, new light systems can accept and deliver a range of information in real time.

says some managers might have staff superstars who are five times more effective than slower employees.

"That doesn't happen with lights. You bring everyone up," Castaldi says. "Too many people rely on constantly throwing labor at problems, and many find that twice the people don't produce twice the throughput. Doing more with fewer people is about handling peaks with optimal labor, keeping labor busy in between, and rounding off the peaks and valleys."

Wynright's Adams described a customer that, because of increased visibility into the engineered labor standards it already had in place, implemented something it calls "self-directed work" in pick-to-light selection modules. "Instead of a supervisor telling selectors to move from one area of the module to another, they put up an informative screen and employees assign themselves," he says. "Having an associate direct his or her own work is a huge change in the conventional atmosphere of a warehouse."

Lights can contribute to some very sophisticated labor modeling that takes orders for the day, plugs the volume into the software and determines how many pickers will be needed that day. Such users might redeploy workers, offer time off or end a shift early.

"The point is: They have options," Adams says. "Data from lights can lead directly to decisions about the schedule for loading outbound trailers, for instance. Can I get more loads on a truck faster? Can I turn doors faster? Can I stop working on Sunday? Some clients have eliminated shifts, a day, or have increased productivity to the point they can shut down another facility."

By moving picking from a "needle in a haystack" exercise into something more akin to "Whac-A-Mole," lights can also shorten training times as labor scales up and down. Another of Adams' clients was able to bring in temporary associates one week ahead of time to ramp up for Black Friday, as opposed to six weeks for the same training before the new light system.

New light technology benefits from advances in software, which enables real-time adjustments and wider operational efficiencies.

Hardware gets easier

Software improvements have rapidly outpaced hardware enhancements in recent years, but those advances have freed up hardware from its past trappings. "Years ago, when you implemented a light system, it was very rigid and static," says Bastian's Cameron. "Now dynamic zoning can enable more or fewer operators to work in the same area."

For instance, in the past, a worker's zone would be clearly defined. If his neighbor was working hard while he only received a few odd picks, so be it. Now, both can share a zone, perhaps with one chasing blue lights and the other chasing yellow. Multi-function light panels might also have a quantity indicator and could be placed as a central display at the junction of four pallet locations, for example.

Light system maintenance has also become significantly less costly, according to Pelej. "With the light bars all strung together, it used to be a Christmas tree effect where if one light was down the line was down," he says. "Now the system works around an individual light, which the customers can sometimes replace on their own in less than 5 minutes from failure to fix."

Castaldi suggests the creative use of fixed lights in neighboring processes can provide compound benefits. One footwear company sorts small orders by light-picking into a Gaylord before sorting from the Gaylord to light-enabled put walls. As soon as an order is complete, an associate on the back side of the wall can pull it out and ship it. "It has been scanned, packed and shipped almost in one step," Castaldi says. "Before, each person would go out to pick a single order. Now they do the same work with seven people instead of 30."

If stationary, hard-wired lights don't make sense, mobile carts can bring light's benefits out into the rest of a facility. Alternatively, the put wall can become mobile. Pelej describes a system using a multicolor light device affixed to a sled on a conveyor. Operators pick to light from shelving or flow rack, turn around and sort items into multiple orders on the sled. □

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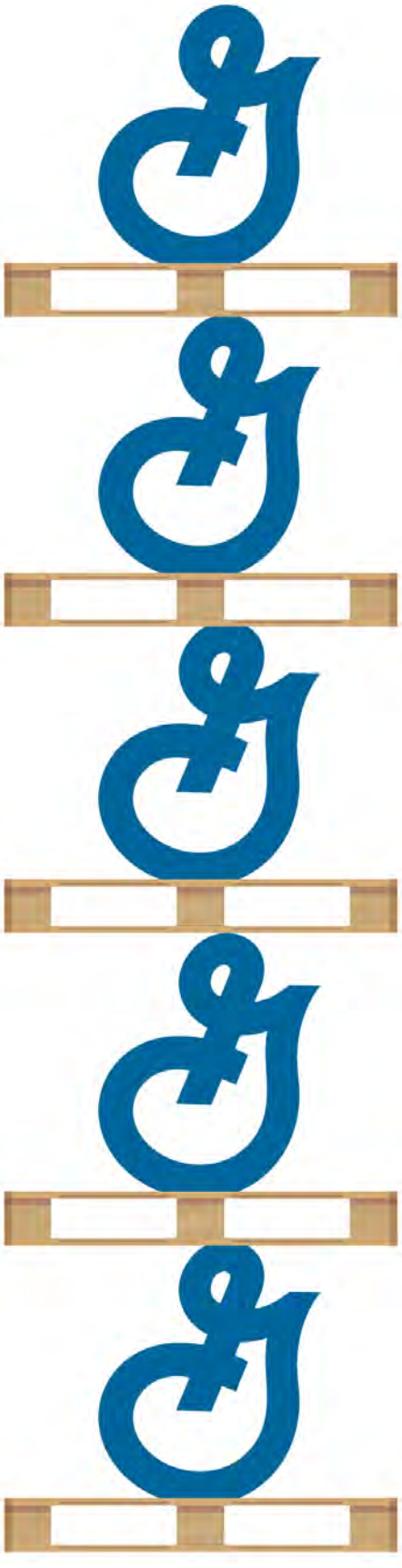


General Mills OPTIMIZE

By consolidating rack systems at its Cedar Rapids plant, General Mills increased storage capacity and freed up space.

By Bob Trebilcock, Executive Editor

Even the best-laid plans are subject to change, especially when it comes to manufacturing and distribution. That was the case at General Mills' Cedar Rapids, Iowa, plant. The plant had successfully used pallet flow and pushback rack systems, but ongoing growth, product changes and long use required a storage system update that would safely add capacity to their existing facility.

As one of the world's largest food companies, with global net sales of $17.8 billion in fiscal year 2013, General Mills operates more than 100 consumer brands in more than 100 countries and markets, including Cheerios, Häagen-Dazs, Nature Valley, Betty Crocker, Pillsbury, Green Giant, Old El Paso, Yoplait and more. The food manufacturer values innovation in every aspect of its business, including storage and logistics.

The plant's previous pallet flow and pushback rack systems had served almost 15 years. During that time, however, volumes grew and pallets became heavier. Wherever possible, the plant switched from 50-pound bags of ingredients to 2,500-pound bulk super sacks to enhance efficiency and minimize materials handling, according to Scott Ladwig, an inventory analyst at the plant. Although the facility was bursting at the seams, expansion was not an option. And, General Mills did not want to use outside storage or maintain material in trailers until needed. Instead, it wanted to find ways to store more raw materials and product in its existing space.

"The challenge was to make better use of our existing vertical warehouse space, since adding to our building was not an option," says Ladwig, who sought to avoid trailers of inventory sitting in the yard or contracted third-party storage. "We wanted to safely optimize our storage, inventory and production."

The solution was a new integrated pallet flow storage and pushback rack system (Steel King, steelking.com).

goes vertical to SPACE

The General Mills plant switched from 25-pound bags of ingredients to 2,500-pound bulk super sacks to enhance efficiency and minimize materials handling.

In a flow storage system, dynamic flow rails are inclined in a static rack structure: In this system, loads placed on one end of the rack system move by gravity on rollers to the unloading end, with speed controllers acting as gentle brakes. When one pallet load is removed, the pallets behind it automatically move forward.

Since the flow system depth, height and width were limited by the size of the facility and capabilities of the materials handling equipment, it was a good fit for the plant's high-volume, space-efficient needs. Once loaded, first-in/first-out (FIFO) product rotation is automatic and the rack eliminates labor and fork truck operation to arrange loads. Forklifts are required only for the initial and final unloading. Since only two aisles are necessary, aisle space can be reduced by 75% and up to 100% more product can be stored than with traditional selective pallet racking.

The solution also used pushback pallet rack, which offers up to 90% more product storage than selective rack systems and up to 400% more selectivity than drive-in racks. Unlike single-deep pallet rack, a dynamic pushback rack system allows the storage of pallets two to five deep while providing easy access to a variety of different SKUs. Pallets are stored behind each other in a series of nested carts and are loaded from the same side of the system, eliminating separate aisles for each function. Composed of a stable rack along with a series of inclined carts and rails, when one pallet is pulled, the one behind it rolls forward.

To optimize the system, General

Once loaded, first-in/first-out (FIFO) product rotation is automatic and the rack eliminates labor and fork truck operation to arrange loads. Forklifts are required only for the initial and final unloading.

Mills consolidated the flow storage and pushback rack into an integrated system, and turned them both 90 degrees to free up floor space for corrugate storage. This approach enhanced the flow of product and packaging materials to the production line, and it allowed high-density storage and flow from end to end.

"Integrating the two separate racks into one rack system increased storage capacity by 42% and freed up space, allowing the addition of 24% more inventory items," Ladwig says. "It eliminated any issue of trailers of inventory sitting in the yard and the potential need for contracted third-party storage space."

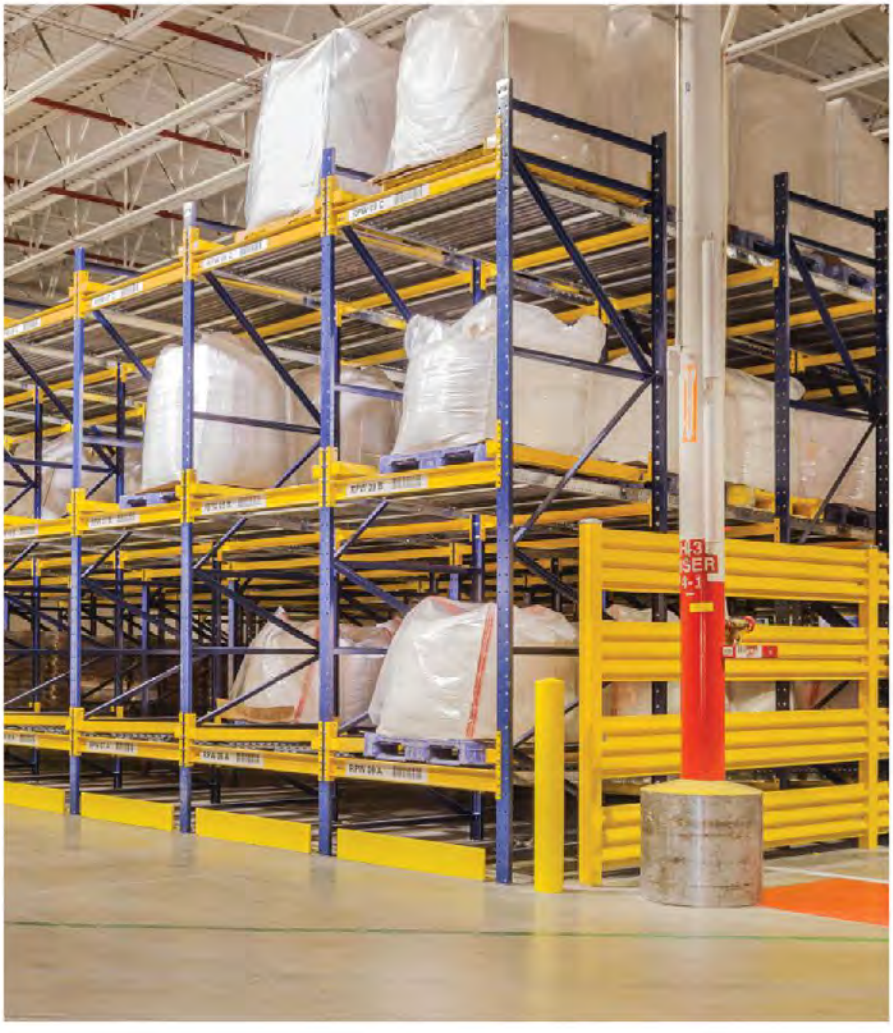
To enhance rack longevity, the General Mills plant chose rack that features a bolted beam connection to structural channel columns. A number of rack features helped the company meet its strength, durability and maintenance goals. Compared to typical racking, the pallet rack, constructed of hot-rolled structural channel column with full horizontal-diagonal bracing, offers greater frame strength, durability and cross-sectional area. The use of all grade-5 hardware provides greater shear strength, and a heavy 7-gauge wrap-around connector plate ensures a square and plumb installation with a tighter connection and greater moment resistance.

Special column punching in the structural rack provided 2 inches of adjustability to better accommodate the dimensions of super sacks and larger pallet sizes. "We needed to adjust to larger pallet capacities now and into the future," says Ladwig. "Simply raising or lowering our rack levels allows us to meet both current and future pallet sizes."

To enhance rack safety and longevity, General Mills' supplier conducted a safety audit of the plant and added a number of safety features to the rack and flow lanes.

As an example, the old rack system suffered structural damage in the past when fork truck operators stacked product alongside the racking. For added protection against such fork truck impact in the new system, prefabricated modular protective railing was installed. The guard rails protect the sides of the rack from fork truck traffic, as well as give them a "backstop" to place packaging up against one of their lay down areas.

In the plant's new pallet flow and pushback rack system, rack bays were widened to better accommodate new



For added protection against fork truck impacts in the new system, pre-fabricated modular protective railing was installed.

product weights and dimensions. The wider rack bays also allowed for a larger "flue" along the upright runs for sprinkler dispersion, which helped to win approval of the design from General Mills' insurance company.

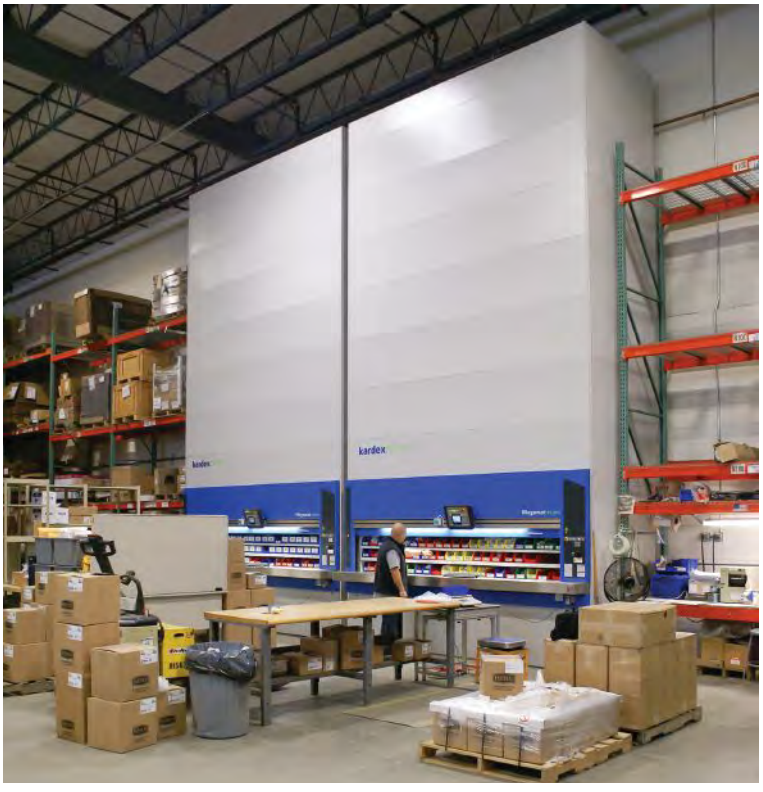
Pallet flow entry guides were installed to improve pallet flow in the flow lanes and allow more forgiving pallet placement. Along with this, heavy gauge pallet flow rollers were placed in the entry and exit flow lanes to better withstand pallet impact. Reinforced rail side channels were also used to hold the pallet flow rollers in place, and the rail channels were placed on thick structural angle for greater durability.

Perhaps most unique to the project, to prevent accidental overloading of the pallet flow rack, an anti-backup "pawl" system restricts any pallet from entry if the rack is already at capacity. "The 'pawl' system prevents pallets from being unintentionally pushed out the delivery side of the flow rack and is designed with individual flippers that flip up to catch any size pallet," says Ladwig.

"With our new integrated pallet flow and pushback rack system, our General Mills plant is operating more safely and efficiently than ever," Ladwig adds. "We're ready for continued growth for the next 15 years and beyond." □

By **Josh Bond**,
Associate Editor

Two vertical carousels allow faster order fulfillment with increased capacity



Company sustains sample order program and increases storage capacity by 167%.

Founded in 1926 and still family owned, Heyco Products designs and manufactures molded wire-protection products and stamped electrical components. The company allows customers to request complimentary samples online, requiring the manufacturing facility in Toms River, N.J., to inventory more than 18,000 sample SKUs. Using two vertical carousels to stock, manage, pick and ship sample inventory, the company increased storage 167% in the same footprint.

The new vertical carousels (Kardex Remstar, kardexremstar.com) replaced two 20-year-old carousels. "They were getting stuck quite often, requiring us to shut them down and power them back up again. This frequent downtime was making it more and more time consuming to fill sample orders," says Colleen Faulknor, vice president of administration at Heyco. "With regularly scheduled maintenance, we've had zero unplanned downtime."

Heyco is filling roughly the same number of sample orders as before, but they are able to fill them in less time. The samples clerk is able to assist in the shipping department once he has filled all of the sample orders.

The vertical carousels stand 24 feet tall and are configured with carriers and totes. The previous carousels were 20 feet tall and provided 1,792 storage locations. The new carousels provide 4,788 storage locations. "With that additional capacity we've gained, we will be able to sustain years of additional growth in our sample program," Faulknor says.

When a sample order is received on the Heyco Web site, the operator prints out a label for the order. The label indicates the sample requested as well as the carrier number within the carousel. The clerk uses the touch-screen controller to rotate the carousel, picks the sample requested, bags it and tags it with the order label.

The operator then completes the shipping paperwork and ships the part. When sample quantities are low, the operator puts in a request to manufacturing and additional quantities are added to the next production order for that part. ☐

By **Josh Bond**,
Associate Editor

VLM helps organize thousands of small sheet metal pieces

High-density solution makes leftover parts easier to find and faster to retrieve.

Architectural Grille is a 40-employee, family-run shop in Brooklyn, N.Y., that makes custom grilles for heating, ventilating and air conditioning systems. Its customers include architects, designers, contractors and homeowners. The company uses around 50,000 pounds of sheet metal every month. A vertical lift module (Vidmar, stanleyvidmar.com) enabled the company to store and organize random pieces of metal that would otherwise become scrap.

Over time, the company has accumulated thousands of small pieces that have been left over after full sheets have been cut. Because the cutoffs are large enough to be used for new grilles, it doesn't make sense to discard them, but their non-uniform sizes make them a challenge to track.

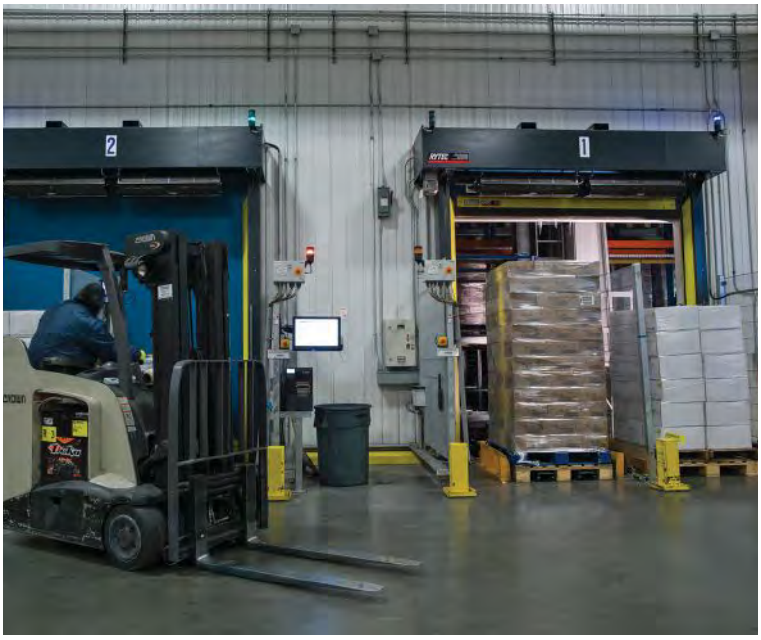
"Over the years we've been stacking them in racks, one on top of the other," says company vice president Anthony Giumenta Jr. "There was no system for tracking this varied stock, so workers that needed a small piece would either take hours looking for it—a waste of valuable time—or would cut one from a full sheet, which is an inefficient use of valuable materials."

Then Giumenta saw a vertical lift module (VLM) at a trade show. As many as 240 racks are stacked inside the tower. Stored items are inventoried using a touch-screen computer running a Windows XP-based software program with a graphical user interface. "Setup only took a couple of days," says Giumenta. "And it took just a couple of more days for my guys to learn how to use the software."

To load the machine, the operator takes a piece of small scrap, measures and weighs it, and enters it into the computer before placing it in one of the racks. Filling the machine with the backlog of scrap took some time: Architectural Grille's VLM has 160 racks that hold 551 pounds of scrap metal, for a total of 18,000 pounds of material. But now, the shop has developed an efficient system of logging in and storing cutoffs as they become available. □

By **Josh Bond**,
Associate Editor

High-speed doors make automated system even more efficient



WMS-integrated doors create an estimated 50% energy savings.

New Jersey-based Preferred Freezer Services (PFS), a leading third-party logistics (3PL) services provider, recently opened a next-generation 10-million-cubic-foot facility in Elizabeth, N.J. Twelve high-speed doors (Rytec High Performance Doors, rytecdoors.com) now minimize cooling costs for a lights-out, automated freezer.

The facility has a 140,000-square-foot, lights-out, sub-zero freezer with a 72-foot ceiling enclosing an automated storage and retrieval system (AS/RS) that manages all put-away and order fulfillment. While designing the facility, the PFS team identified doorway access as important to minimize energy loss to the adjacent dock area that is also nearly 50 degrees warmer.

Zan Perry, construction manager at PFS, credits the 12 insulated, high-speed doors along the freezer's wall with a 50% energy savings compared to doors used at their older locations. "They allow us to turn off our blowers and heaters," says Perry, "and door actuation is integrated with freezer operation and our warehouse management system (WMS)."

The operating speed averages 101 inches per second, accommodating the intake and shipment of 1,000 pallets a day. The doors' electronic controls are also merged into the WMS for smooth product flow. When product arrives at the PFS dock, a computer-equipped forklift operator picks up the pallet, notifies the WMS, and deposits it at the doorway. The system then activates the door to quickly open for pickup by the robotic crane inside the freezer.

For shipping, the WMS communicates with the forklift's on-board computer to notify the driver a pallet will be waiting at a designated freezer door. The instant the forklift arrives the pallet is deposited by the crane outside the doorway before the door closes in 2 seconds.

"Cold storage is pretty demanding," notes Perry. "From what we have seen at the Elizabeth facility, the doors have helped take us to that next level." □

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STATE OF LMS: Earning respect

While many logistics professionals took a "wait-and-see" approach toward labor management systems, today they're hearing stories about significant productivity gains in exchange for a fairly low-cost software solution.

By Bridget McCrea, Contributing Editor

The cost and effort that go into managing labor is no joke. For most organizations, in fact, labor ranks as the biggest cost of doing business. Not only are there salaries, benefits and bonuses to regularly shell out, but every payroll error, compliance issue or accidental overpayment eats away at a company's bottom line.

To help control these costs and ensure that all payouts are warranted and earned, an increasing number of companies are turning to labor management systems (LMS). Defined by research firm Gartner as a system that provides labor productivity reporting and planning capabilities, LMS can analyze workforce requirements based on a certain amount of work to be performed and a standard unit of time to carry out each element of work.

These labor productivity planning capabilities provide the ability to measure and report the performance of individuals,

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groups, or facilities and compare that data to a predefined standard for performing each defined element of work. Put simply, an LMS uses historical data to accurately estimate throughput in the warehouse and then uses that information to schedule regular, overtime, and/or temporary labor in a way that accommodates shifting demand, such as seasonal fluctuations.

Over the next few pages we'll look at how LMS is being put to use inside logistics operations, show both the latest and the expected advancements for this software sector, and then hear from a manufacturer that recently streamlined its timekeeping and reporting processes with a new labor management system.

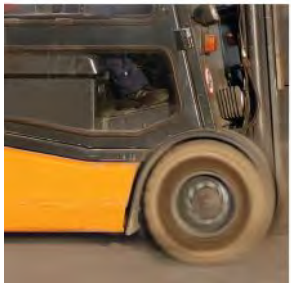
Momentum is building

The fact that logistics professionals are hearing and reading about companies that are seeing real results from their investments in LMS is prompting more interest in the software, according to Norman Saenz, managing director at supply chain consultancy St. Onge. "They're hearing the stories about productivity gains in exchange for a fairly low-cost software solution," Saenz explains, "and they want to see some of those solid benefits themselves."

What makes LMS particularly enticing for logistics operations, Saenz notes, is its ability to go beyond the norm and "naturally drive process improvements" within an organization. "It's more than just software; it actually looks at the processes that the company is going to be measuring," says Saenz, "thus promoting a review of the organization's audit methods, standards, preferred ways of doing things, and so forth."

With the resultant information in hand, logistics professionals can improve on those processes before they even officially roll out an LMS. "The whole process of studying labor standards is a benefit of installing an LMS," says Saenz. "That's the first step because you have to look at the job that's being standardized and the methods that you want to be measuring." In many cases, this "up-front" assessment of existing can naturally lead to productivity improvements and then pave the way for successful LMS implementations.

But wait, there's more. Once in place, an LMS can help an operation achieve up to 30% in labor savings—yet another benefit of automating a process that for many is still rooted in paper timecards, antiquated timekeeping systems, and manual reporting and reviews. In most cases, Saenz says those benefits are centered within the four walls of the warehouse and distribution center, where different positions and tasks can be effectively standardized to ensure that the right person is doing the right job and within the specified timeframe.



Saenz, who works with managers to evaluate their LMS options, points to best of breed suppliers like Kronos, Spalding Software, and Next View Software, and multifaceted software developers like Infor (which owns Workbrain), Manhattan Associates, HighJump, and RedPrairie/JDA as a few of the choices available on the market today. He sees the LMS sector as particularly ripe for new and existing best-of-breed suppliers that can come up with innovative and cutting-edge labor management capabilities.

"As the bigger vendors look at doing large software installations, versus $100,000 LMS projects, that leaves the door open for smaller firms," adds Saenz.

Time to rock the boat

Ask John Frehse, managing partner at New York-based workforce management consultancy CorePractice, why more companies haven't historically used LMS, and he says cost justification is the major holdup and that it's followed closely by the emotional aspect of employee labor management.

On one hand, Frehse says logistics professionals haven't always had the proof that they need to justify an LMS installation, and that the potential labor disruptions that can surface have also kept companies at bay.

"Even when you can justify the cost of an LMS, do you really want to rock the boat?" Frehse asks. "Getting over that hump has been a big challenge for warehouse/DC operations, which tend to spend money everywhere else before actually talking to their employees."

But that landscape is beginning to change. Forced to shave 5% to 10% of their operating budgets every year, Frehse says that more logistics professionals are warming up to the idea of opening workforce management conversations with their staff members. As part of that initiative, an increasing number are turn-

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ing to technology for help.

"LMS software has gotten more mature and now includes more features and functionalities," says Frehse. "And, quite frankly, most warehouse/DC operations have nowhere else to go to capture cost savings." Take variable demand planning, for example. Unlike the more predictable seasonal planning, management of variable labor requires an automated, analytical approach that can't be tackled effectively with paper, pencil and telephones.

Using an LMS, warehouse management can quickly pick up on leaks in productivity, view real-time productivity levels, identify deviations, and take immediate action. "You can do course corrections on the spot rather than a week later, when you have already missed your chance to optimize your high-cost employees," says Frehse, adding that the time savings alone translates into significant bottom line savings for the organization.

Final frontier

As technology continues to evolve and as warehouse/DC workforce management needs change, LMS suppliers are more than likely to develop new functionalities and capabilities to roll with the changes. A few have already created mobile solutions that allow supervisors and managers to use their LMS while walking around on the DC floor, says Frehse. Still others are exploring the use of location software and Bluetooth technology to easily pinpoint where employees and equipment (lift tracks, pallet jacks) are at any given time.

"Managers will be able to use the technology to triangulate where someone is in the warehouse, measure travel times, and identify false picks and other wasted trips," says Frehse. "Location management for workers is the final frontier for labor management in the DC," Frehse says. "And even though it makes people a little uneasy, it's an incredibly effective tool from a business perspective." □

Maple Leaf Cheese: LMS increases efficiency

With 162 employees working in four locations, Maple Leaf Cheese of Monroe, Wis., historically relied on a mix of paper timecards, an older timekeeping system, and courier-delivered time reports to manage its labor force. Once collected, the reports were handed over to an HR staff member who manually calculated employee hours and inputted data into a spreadsheet for an outside accounting firm/payroll processor.

The system was arduous at best, but was replaced in 2013 when the inevitable happened. "The time clock at our largest facility broke," says Vicki Bergendal, IT administrator for the company that encompasses Maple Leaf Cheese, Edelweiss Creamery, and Alpine Slicing & Cheese Conversion. The three manufacturers operate independently, but share operational resources (IT, payroll, human resources and administration) and have collectively doubled in size since 2007.

Rather than simply replace its old time clock, Maple Leaf looked around for a labor management system (LMS) that would help streamline and centralize the employee time-keeping and reporting process across all of its facilities.

Top criteria for the solution included the ability to calculate and accumulate time automatically; payroll capabilities (should Maple Leaf decide to bring that function in-house); around-the-clock technical support from the vendor; and the ability to interface with the manufacturer's existing Microsoft Great Plains financial software.

After shopping around, the company selected a Workforce Ready Timekeeper and HR software solutions as well as the supplier's InTouch time clock (Kronos, kronos.com). Today, all of Maple Leaf's hourly, salaried and temporary workers—including those in the warehouse—punch in and out on the time clock, which converts that time to decimal hours and calculates pay rates.

The human resources professional who once handled the manual calculations uses that time saved to monitor for missed punches and discern vacation days from unexcused time off. Maple Leaf also uses its LMS to assign labor cost information to specific line or job function (creating cheese chunks versus slices versus sticks, for example) and ensure that the work time is allocated to the right cost center.

The solution has also helped Maple Leaf gain logistics and cost efficiencies that it previously wasn't able to attain. "Our ability to get hours by cost center so we can see our efficiency—something we couldn't do before—helps us determine cost quotations," says Bergendal. "Seeing the hours helps us determine the cost of manufacturing, packaging, distribution and other expenses."

Maple Leaf, which has historically been challenged by attendance issues, has also established a point system whereby employees get "points" for not showing up on time for the 4:00 a.m. shift, for example, or for taking unexcused work absences. "Those reports are reviewed daily by supervisors who can quickly address any issues," says Bergendal, "such as someone forgetting to punch in for the day." Attendance has improved significantly since the point system was implemented, she adds.

Bergendal, who says Maple Leaf encountered no significant challenges during the LMS installation or implementation phases, sees 2014 as the year the company further expands the use of its solution to, for example, allow employees to enter time off requests right into the clocks. "We're through the training phase," she says, "and ready to make more use of the system."

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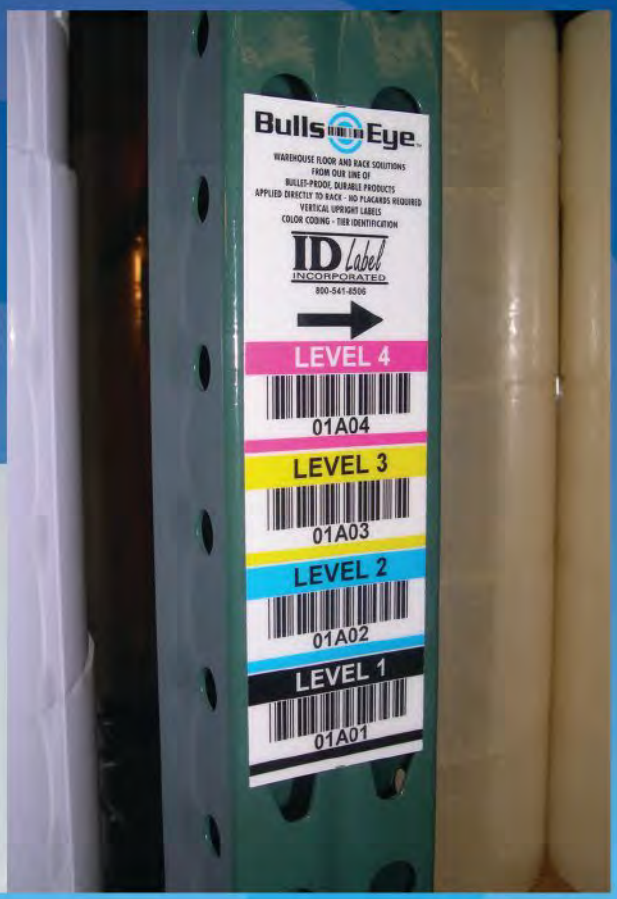

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Block trailer hinge gaps with shelter system

To prevent energy loss, the Hinge Guard dock shelter system closes off all hinge gaps without restricting trailer access. Made from impact-resistant, high-molecular weight polyethylene (HMPE), it comes in two profiles: large for refrigerated trailers and small for standard trailers. When a trailer backs into the dock, the system automatically grasps the trailer's sides, covering the hinge gaps to create a consistent seal from top to bottom. Offering full, unrestricted access to the trailer bed, the system may be specified as an option for the supplier's FoamSide dock shelters. **Kelley, 800-558-6960, www.kelleyentrematic.com.**

Dock sealing system eliminates daylight, gaps

The Eclipse shelter dock sealing system blocks light and seals gaps to prevent contaminants from entering—and energy from escaping—a facility. Along the sides, GapMaster hooks wrap around swing-open trailer doors, sealing the gaps created by the door hinge. The hooks are wrapped with a flexible vinyl sleeve that conforms around the hinges for a better seal. To seal the top of the trailer, a weighted head curtain applies more than 100 pounds of pressure across the full width. Gravity-based, this keeps the curtain in constant contact with the trailer. At the corners, fabric corner pockets connect the side curtains and the weighted header. To seal the bottom, the PitMaster under-leveling sealing system provides a barrier below and around the dock leveler, while lip corner seals, filler pads and other components block gaps on the inside of the dock. **Rite-Hite, 800-456-0600, www.ritehite.com.**

Top-of-ground dock lift requires no pit work

The Instant Dock 6568 top-of-ground dock lift only requires lagging into position and plugging into a power receptacle for instant operation—no pit work required. Incorporating all tubular legs for maximum rigidity, the lift may be finished in stainless steel, galvanized, FDA epoxy or enamel finishes to meet unique specifications. Features include a hinged bridge with pull back chain, integrated approach ramp, machine-grade cylinders with clear plastic return lines, a power unit with controller, UL-listed control panel and combination wheel chock/ramp. The lift's platform, measuring 6 x 8 feet, travels at speeds up to 13 feet per minute. **Advance Lifts, 800-843-3625, www.advancelifts.com.**

Galvanized construction extends dock lifts' service life

Dura-Dock loading-dock lifts transfer loads quickly and safely from any truck bed to any dock height, and vice versa, without ramps or inclines. Offered in 5,000- and 6,000-pound capacities, the lifts feature corrosion-resistant, galvanized base and legs. Working from grade level to a maximum height of 59 inches, the lifts can be installed to accommodate any dock or loading configuration, including whether the truck is parked perpendicular or parallel to the dock. Manufactured with platform sizes ranging from 6 x 8 feet to 8 x12 feet, the units standard features include a weatherproof push-button NEMA-4X control; diamond-tread, steel platform with beveled toeguards painted safety yellow; removable steel handrails; a hinged, diamond-tread throw-over plate at one end of the platform and a snap chain at the other; hardened steel pins operating in self-lubricated bearings at all pivot points; and adjustable lowering speed. **Southworth Products, 207-878-0700, www.southworthproducts.com.**

Protect loading dock personnel with guarding

Offered in two configurations and four opening sizes, EdgeGard dock gates increase operator safety near truck loading pits, open dock doors and other hazardous areas. Standing 42 inches high when closed, the gates have been tested to withstand the 200-pound OSHA 1910.23 load force protection requirement. The Folding-Rail model protects wider openings (from 10 to 12 feet) and requires just 116 inches of maximum clearance height. It has a rubber wheel that rolls smoothly along the dock floor as the gate folds to the side. The Straight-Rail version (for 8- or 10-foot wide openings) features a counterbalanced gas cylinder and a smooth cantilever action that ensures easy operation and reduces operator fatigue. When retracted, the gates completely clear their protected openings for unimpeded traffic flow and maximum accessibility for freight loading. **Wildeck, 262-549-4000, www.wildeck.com.**

Give some direction at the loading dock with signage

A line of dock signs gives directions and advises employees and visitors of policies and procedures. Properly displayed signage directs fork trucks, semi trucks and foot traffic in an orderly, efficient manner. All signs are made to order, enabling any size, orientation and color to be chosen to best fit each application's unique needs and facility layout. Made of custom-cut, high-quality, UV-protected vinyl, the signs come in more than 80 colors. Features include 0.040 aluminum backers in 22 colors, radius or squared edges, and a variety of mounting hole patterns and sizes. **Allied Solutions, 800-643-5424, www.alliedproductsolutions.com.**

Gate protects dock personnel

The Work Safe Gate has yellow and black safety striping to provide highly visible protection for personnel working around open dock doors. Engineered with a safety latch mechanism that keeps the gate securely closed, the device is easy to operate and has no electrical requirements. It meets the requirements of OSHA Standard 1910.23 to withstand a minimum of 200 pounds of top rail force. The gate is offered in five standard sizes from 6 to 10 feet wide to accommodate a range of door opening widths. **APS Resource, 262-518-1000, www.apsresource.com.**

Integrate all loading dock equipment controls with single master panel

For convenience, the Blue Genius Platinum Series master control panel operates an entire loading dock system from a single location. Integrating the controls for all standard dock equipment, it improves efficiency, safety and productivity while reducing electrical costs and optimizing wall space. The panel operates a variety of equipment, including levelers, vehicle restraints, overhead doors, dock lights and inflatable seals.

An LCD menu screen displays equipment status, as well as operating and troubleshooting instructions. To send safety signals to dock staff and truck drivers, it uses an LED light-based communication system. The panel can be installed in a wash-down zone or outdoor location, because of a NEMA 4X-rated polycarbonate enclosure resists water and corrosion. **Blue Giant Equipment, 905-457-3900, www.bluegiant.com.**

Floor scales provide cargo weight quickly, accurately

Used at in- or out-bound shipping docks or when sorting inventory, a line of industrial floor and platform scales weigh goods with very high accuracy, reducing the likelihood of revenue loss. The scales are placed at a central location near the dock, allowing operators to wheel lighter loads onto the scale for weighing; heavier loads—including bundled or palletized products—can be driven directly onto the scale by a forklift. Models include a deck scale, drum weigher, dual roller scale for heavy cargo, hinge-top for washdown environments, pancake scale, and portable versions. **Avery Weigh-Tronix, 877-888-1646, www.averyweigh-tronix.com.**

Edge-of-dock levelers decrease back strain

A line of edge-of-dock levelers uses a lever bar to operate. Easier and safer to operate than a standard dock plate, the unit incorporates a heavy-duty spring assist that decreases the strain on a dock worker's back, improving productivity and eliminating worker compensation claims. Only 28 pounds of force operates the center section, while 34 pounds of push force to applies the lip on the truck bed. **Beacon Industries, 800-454-7159, www.beaconteknology.com.**

Portable trailer jack features round top plate with spin lift

Relius Elite trailer jacks feature an 8-inch diameter, self-leveling top plate with a spin lift and triangular, 0.5-inch-thick steel base plate. Capable of lifting up to 50,000 pounds, the portable unit travels on urethane foam wheels and includes a removable handle. It is painted safety yellow for visibility and holds up to 100,000-pound static loads. **C&H Distributors, 888-316-2223, www.chdist.com.**

Air-powered dock leveler

Offered as an alternative to hydraulic, mechanical, low-pressure/high-volume air bag levelers and power-assisted levelers, the CentraAir series air-powered dock leveler is durable, dependable and safe. The unit employs an automotive grade bellows system. Multiple units run with existing shop air or a dedicated compressor, making it ideal for conveyor-loading applications. It can be operated manually with a lanyard control located at the back of the leveler or with a push button. Environmentally friendly, the leveler requires low amp draw at each dock (0 to 0.07 amp) to maximize energy savings. **Poweramp, 262-255-1510, www.poweramp.com.**

Alarm system combines siren with strobe light

Safety Sentry warning signal alarm uses a 105dB siren and strobe light combination system in sync with industrial motion-sensing technology. The device improves loading dock safety by alerting personnel that a vehicle is backing into the dock position. Packaged in a NEMA-4 rated housing, the unit is constructed of UV-resistant polycarbonate using liquid tight strain relief connections. **Erich Industries, 800-882-5839, www.erichindustries.com.**

Position trucks, trailers above loading docks to boost efficiency

A line of wheel risers is offered for use at loading docks to eliminate unsafe, below-dock conditions. Manufactured in both steel (with 40,000 pounds capacity per pair) and aluminum (with 30,000 pounds capacity per pair), the risers allow trucks and semi-trailers to be positioned properly above the dock for safer, more efficient loading and unloading of freight. The risers come in two widths—18 and 24 inches—and multiple top lengths to support single, dual or tandem axle trailers. Custom sizes may be specified. Depending on the application, users can choose to permanently position the risers or move the aluminum models by hand and the steel versions with a forklift. **Bluff Manufacturing, 800-433-2212, www.bluffmanufacturing.com.**

Prevent dock intruders with spiral doors

The high-speed Spiral roll-up security dock door opens and closes at speeds of 60 inches per second. Because the door opens and closes so quickly, operators are more likely to close it—keeping intruders from accessing a building through an open dock. The door also speeds up traffic flow.

Features include rigid, aluminum slat construction that eliminates metal-on-metal contact for quiet operation and minimal maintenance; a compact, variable-speed AC drive for soft acceleration and braking, smooth starts and stops, and longer drive life; and a durable rubber membrane covering the slats' aluminum connecting hinges to create a tight seal against debris, drafts and inclement weather. **Rytec, 262-677-6170, www.rytecdoors.com.**

Vehicle restraint incorporates advanced communications

The TPR truck-positioned vehicle restraint automatically orients itself to secure a trailer's rear impact guard, reducing the chance of premature trailer departure. It includes an advanced communication system housed in a NEMA-12 control panel.

The three-light LED system establishes a safe and efficient loading dock environment by producing a clear line of communication between the truck driver and dock attendant. Features include indoor and outdoor signage, a gear motor that keeps the hook continuously engaged, restraining force in excess of 30,000 pounds and a 9-inch low-profile carriage with off-grade service range from 9 to 27 inches. For safety, the device's control panel offers a keyed bypass/override switch. **McGuire, 262-255-1510, www.wbmcguire.com.**

Drive-away prevention system mitigates human error

To stop accidents at automatic and manual loading dock doors, the Salvo dock safety system prevents drive-aways. The device is a brake line interlocking system that minimizes the possibility of human error to protect workers from injury and property from damage. An integrated glad hand lock attaches to the truck's emergency brake line, ensuring that brakes are applied. This action triggers the release of a uniquely coded key used to open the dock door to begin loading or unloading the trailer. Only after work is complete and the door is closed does the key release the system, making it impossible for the driver to depart until it is safe. Configurations include manual and automatic door systems, brake line locking options and accessories. The system can also be equipped with DockMonitor software to capture operational data such as loading time, number of operations, idle time and available time. **Castell, 312-360-1516, www.castell.com.**

Portable steel yard ramp facilitates trailer loading, unloading

A portable steel yard ramp allows traffic to move from the dock level to the ground or from the ground onto the back of a truck. To help loading and unloading flow smoothly, the ramp is equipped with 18-inch industrial rubber pneumatic tires for easy movement around the shipping yard. A hydraulic adjustment system permits fast, reliable elevation to align the ramp with any trailer bed height. Other features include a choice of tow clamp or fork clamp for easy transportation; serrated bar grating for traction and prevent build up of debris; safety chains to secure the ramp in place; and a 72-inch long level-off section for easy access for end-loads. **Systems Inc., 800-653-5424, www.docksystemsinc.com.**

Use sunlight to power dock leveler

The hydraulic SolarDock leveler uses solar energy as a power source, saving energy and reducing loading dock costs while supporting sustainability initiatives. Equipped with a solar cell to charge the battery, the unit requires only a local 115/1/60 plug-in supply to accommodate the low current (less than 1 amp) AC auxiliary charger. Features include battery charge status sensing that automatically alternates between AC and solar cell charging as needed, simple push-button control operation, and a hydraulic lift and lip cylinder that works in conjunction with a Pentalogic valve to control all of the leveler's operations. **Pentalift Equipment, 519-763-3625, www.pentalift.com.**

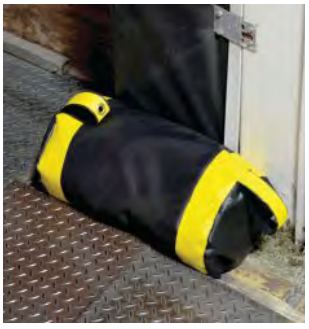
Heavy-duty pit levelers handle up to 80,000 pounds

The HDH hydraulic pit leveler is capable of accommodating heavy loads with dynamic capacities up to 80,000 pounds. The device uses an extra-heavy rear angle constructed with 55,000-pound minimum yield steel with strategically placed gussets to maximize structural support and frame strength. Base frame support struts reinforce the leveler's structure, while yellow and black diagonal stripes on the toe guards enhance safety. To extend the unit's life, it can be hot dipped galvanized—a coating that is recommended for applications in coastal areas, food service industries and chemical/pharmaceutical environments. **Pioneer Dock Equipment, 800-251-3382, www.pioneerleveler.com.**

Let fresh air in, keep bugs out with screen

Offered in six different models, Screen-Pro roll-up bug screens prevent bugs, birds and other unwanted visitors from entering an industrial facility through open loading dock doors. In sensitive food production and packaging environments, the screens promote a bug-free environment, required by Food and Drug Administration and AIB regulations. The doors also increase energy savings and create a more comfortable work environment by allowing fresh air into your building while acting as a physical barrier, deterring theft and trespassing. **TMI, 412-787-9750, www.tmi-pvc.com.**

Block drafts between dock seals and levelers



The dock seal draft blocker stops air transfer between dock seals and dock levelers to maintain consistent temperatures inside a facility. Offered in three models of varying lengths (18, 24 and 36 inches), the seals are equipped with top carrying handles for easy placement and removal. They are filled with foam for compressibility, while an integrated air vent allows the unit to return to its original shape if crushed. To ensure a tight seal, the blocker's base is weighted. The device is constructed of heavy-duty vinyl and also includes grommets that enable it to be secured in position. **T & S Equipment, 260-665-9521, www.tseq.com.**

Prevent unscheduled trailer departure, creep and tip-over

The Smart-Hook vehicle restraint secures a trailer at the loading dock by engaging the rear impact guard with a large rotating hook. This prevents unscheduled trailer departure, creep and tip-over. The restraint's patented direct drive system eliminates clutches, chains or brakes while providing constant upward biased hooking force. To reduce maintenance, a waterproof non-mechanical hook position sensor eliminates limit switches. The unit stores above ground, positions automatically to adjust to various truck heights, and maintains a tight hold on trailers. To keep the device free of ice, snow and debris, its housing is stored above ground. **Nordock, 866-885-4276, www.nordockinc.com.**

High-speed doors reinsert themselves into track if dislodged

Intended for interior and exterior use, the M2 Basic high-speed doors are crash forgiving, automatically re-inserting themselves into their track after an impact or gust of wind. The doors are engineered for up to 100 daily use cycles, operating at speeds of 24 inches per second. Capable of withstanding wind speeds from 72.5 to 95 miles per hour, the doors are manufactured in widths up to 12 feet. Features include polyvinyl chloride (PVC) door curtain construction, continuous motor, steel drum and shafts and structural galvanized steel channel side guides. **Dynaco, 800-459-1930, www.dynacodoor.us.**

Header protects against inclement weather

For new installations as a complete unit or as a retrofit to existing seals and shelters, the WeatherGuard 1600 header protects the loading dock area from rain, snow, sleet, hail and wind. It is ideal for when a drive approach slopes toward the dock opening, causing inclement water to funnel into the dock area—affecting employee comfort and damaging cargo. Constructed of Dynaflex and Dynalon materials, the device integrates a translucent, structurally supported rigid head member that allows natural light into the building. A spring-loaded, foam-filled, pivoting head ensures a watertight seal at the top the vehicle. **Fairborn, 800-262-1188, www.fairbornusa.com.**

Black yard ramps accented with prismatic reflective markers for visibility

Sporting a sleek black finish and accented with high-intensity prismatic reflective markers, a line of yard ramps offers increased visibility for safety. The ramps are manufactured from high-strength, low-alloy material and feature a short approach to reduce the chance of slipping in rain or snow during loading. For more stability and easier placement, the ramps have an 8-foot level off section, and come standard with 23-inch pneumatic tires for mobility (puncture resistant, solid fill tires may be specified optionally). The ramps provide ground-level access to trucks, railcars or loading docks and support maximum capacities up to 30,000 pounds. **Copperloy, 800-321-4968, www.copperloy.com.**

LED dock light modules illuminate work areas to boost safety, productivity

Offered with metal and plastic heads, a line of built-in LED dock light modules illuminate loading docks for enhanced worker safety, efficiency and productivity. The lights are engineered to be more durable than units with incandescent bulbs. The modules use up to 94% less energy than incandescent lamps, and feature a 60,000-hour lifetime rating. Accessories include single and double strut swing arms, portable stands, wire guards, brackets and magnetic mounting kits. **Tri Lite, 800-322-5250, www.triliteinc.com.**

Secure, durable wheel chock holder

Capable of holding up to 40 pounds in a usable width of 10.75 inches, the wheel chock holder keeps chocks secured and available for use whenever needed. The holder is constructed of steel for long life and durability; a yellow powder-coat finish makes it highly visible to drivers and workers. Measuring 12.875 x 7.4375 x 6.4375 inches, the holder incorporates pre-drilled mounting holes for simple attachment to a designated surface. It can be further enhanced with additional accessories, including chains, straps and signage. **Vestil, 800-348-0868, www.vestil.com.**

Load or unload trailers and docks with yard ramps

A line of yard ramps increases handling safety and efficiency by allowing workers to smoothly load or unload trailers and docks with ease. Featuring steel-welded construction, safety chains, grated decking, heavy-duty landing gear and beveled approach and exit, the ramps free up dock doors while allowing service of more trailer loads. Ramps can be custom engineered to unique specifications and are either portable or stationary. **Industrial Toolz, 262-671-5000, www.industrialtoolz.com.**

Sectional door with R-value of 19.40

For commercial installations, the Model 2700 sectional door incorporates a 2-inch-thick layer of polyurethane insulation for an R-value of 19.40. This construction maintains the temperature inside loading dock areas, protecting against extreme heat and cold. Engineered as a sandwich door, it incorporates 27-gauge steel interior and exterior skins that enclose the insulation. A weather-tight, tongue-and-grove joint and dual rubber bottom seal prevent air and moisture from getting inside the door. All sections are ribbed and have an 18-gauge reinforcement strip at the top and bottom for added strength. The strip also allows mounting of full hinges. **Amarr Garage Doors, 800-503-3667, www.amarr.com.**

LED strip lights signal in three colors

Placing the Illumadoor signaling system on the outside left and right side of each dock door enables communications with drivers as they back their trailers in for loading or unloading. The system is comprised of LED strip lights measuring 3.28 feet (1 meter) in length and holding 30 LED modules in red, green and amber colors. The colors indicate stop, go and warning conditions, and can be connected to a motion detector to act as a guide for drivers. Each color is controlled by external control logic, with a predefined flashing command connectable to one or all colors. Features include a combination power supply junction box, silicone enclosure, custom aluminum extrusion mounting, diffusing lens and brackets. The power supply operates on 24-volt AC/DC and supplies 12-volt DC power for up to six individual strips. **Pine Meadow Controls, 847-608-9500, www.pmcdoor.com.**

Software supports building project planning, development

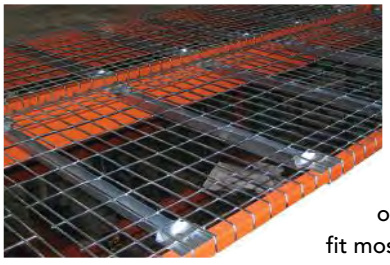
To offer the architecture, engineering and construction (AEC) community an exclusive, single-source solution to create a custom building submittal package, the supplier partnered with CSPECS to create a software-based specification system including details about its dock equipment and products. The system supports project planning and development, saving time by eliminating inaccuracies. Accessible through the supplier's Web site, the system provides accurate product information, simple navigation of products and efficient sharing of data. **Serco, 877-933-4834, www.sercoentrematic.com.**

Turn to knowledge base when selecting yard ramp

The Web-based Yard Ramp Knowledge Base can guide the proper selection of a yard ramps for a given loading/unloading operation. The tool includes purchasing guidelines as well as in-depth information about ramp capacities, dimensions and material options. Educational guides explain safe yard ramp operation, detail the variety of optional features, describe how to safely move a portable yard ramp and break down possible financing options. Ramp features include steel construction, grated decking for optimal traction, landing gear and safety chains. **Handi Ramp, 847-680-7700, www.handiramp.com.**

Small-format pallet sized for deliveries to retailers

To optimize replenishment in small-format stores, a new 42 x 30-inch pallet streamlines delivery, minimizes product touches and increases on-shelf availability. All-plastic, the HP pallet allows full and split cases to be sorted and loaded at the distribution center. The pallet is then delivered to the store and used for replenishment at the point of sale. Once pallets arrive at the retailer, they can be moved directly to the floor, which can reduce labor costs and maximize storage space. With 45 pallet locations per 53-foot trailer, the pallet maximizes truckload density. It has a 20-pound tare weight and ergonomic hand holes for easy manual handling. **ORBIS, 800-890-7292, www.orbiscorporation.com.**



Wire mesh rack decking offered

Covered by a two-year warranty, a line of welded wire mesh decking is constructed with flared or standard U-channels to fit most beam styles. The decking is manufactured from galvanized steel for long-lasting, rust-free use and can be ordered in a powder-coat finish with many colors available. In addition to meeting fire code standards and promoting safety, wire decking is easy to install, requires minimal maintenance, and adds security and strength. The decking may be specified in wire gauges from 4 to 7, with support channels in 12 to 16 gauges. Standard capacity models hold up to 2,500 pounds; heavy-duty versions hold loads more than 2,500 pounds. The decking fits existing rack from all major manufacturers. **Next Level Storage Solutions, 800-230-8846, www.nextlevelstorage.com.**

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Michael Mikitka

WERC

TITLE: CEO, Warehousing Education and Research Council (WERC)

EXPERIENCE: CEO for 5 years

DUTIES: As an organization focused on optimizing processes inside the four walls of the warehouse, WERC offers resources that help logistics professionals stay at the leading edge including educational events, performance metrics for benchmarking, practical research, expert insights and peer-to-peer knowledge exchange.

***Modern:* Organizations like APICS, MHI and CSCMP began with a specific focus and are expanding into broader supply chain organizations. How is WERC evolving, and how do you view your mission today?**

Mikitka: WERC started out as an organization that focused on activities inside the four walls of the warehouse. Over the last 10 to 15 years, WERC has expanded that view to include activities that touch the four walls. That's why you'll see topics like ports. Fifteen years ago, a member in Joliet, Ill., may not have cared about ports. Today, however, that member may have packaging requirements for international shipments or may receive product that arrived at a port or may be shipping to a port. We are still DC focused, but we recognize that our members are asked to support their organizations' strategies. But, it all ties back to distribution. That's what makes us different from the other organizations you've mentioned. We are part of the supply chain, but we are still focused on optimizing our part. That's what WERC tries to be.

***Modern:* Is the role of your members—the role of the warehouse and DC—changing within the organization?**

Mikitka: Yes, it's changing. The strategic value of warehousing is evolving and increasing. We used to be thought of as four walls that held stuff. Today, organizations are looking to the DC to serve their customers, meet their financial goals and contribute to the overall wellness of the organization.

***Modern:* Distribution is really enabling the business, isn't it?**

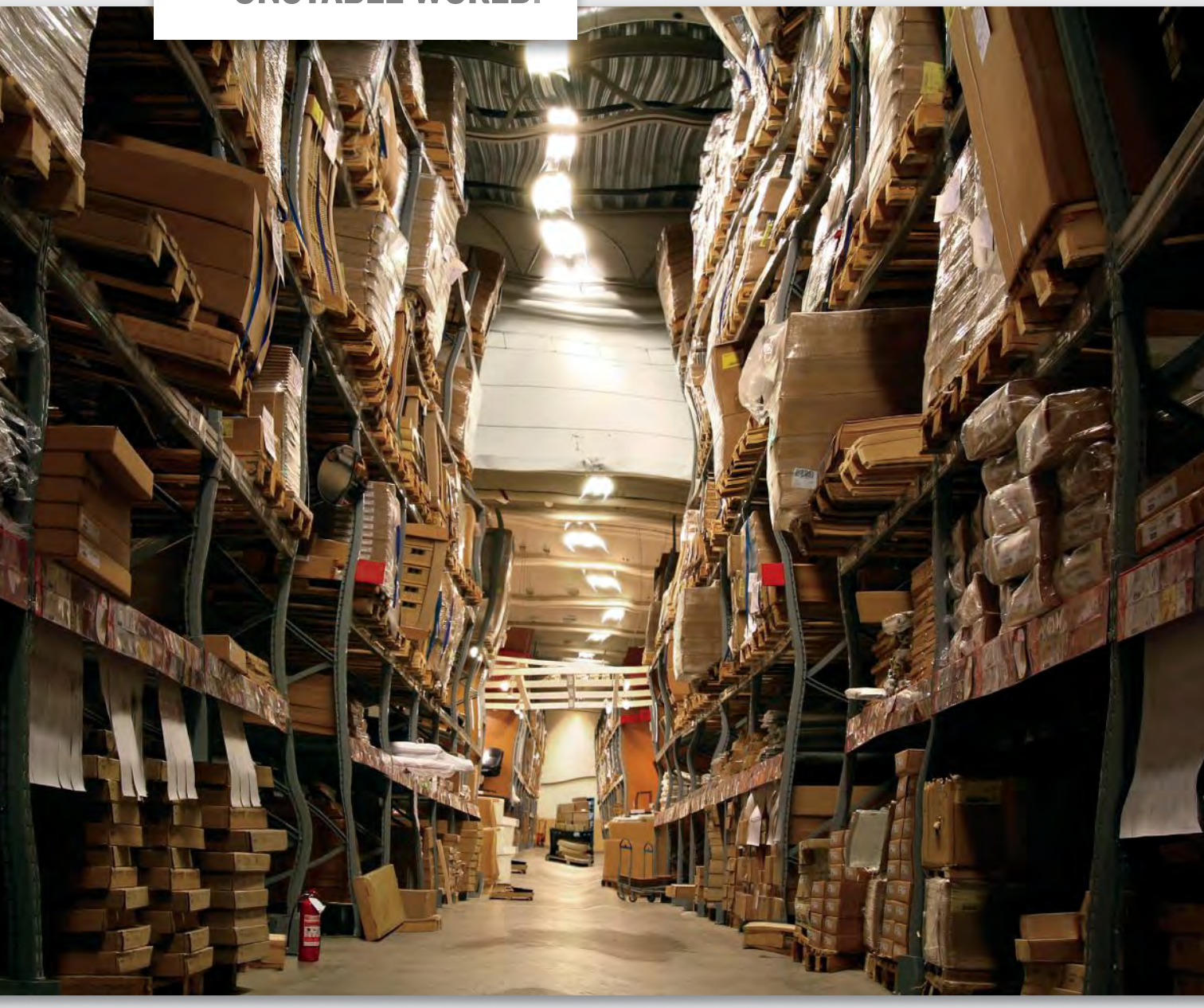
Mikitka: I think so. We have directors and VPs as members, and we have warehouse managers as members. What we're hearing from all levels is that they're being integrated into the service and sales departments of their organizations. Companies are including their logistics teams when they meet with their customers. And, this bolsters the credibility of the service and sales team.

***Modern:* As you look forward, what do you think is the biggest challenge distribution professionals will face in the future?**

Mikitka: There are a number of challenges to overcome, and I think it'll be interesting to see how our industry confronts them. One is the workforce. It's interesting that there are so many layers to this issue. For some, it's an aging workforce and retirements. For others, it's a diverse workforce and language barriers. For others, it's regulation. There are so many different angles that our challenge is finding a focus so we can have the biggest impact on our industry. We could address the diversity issue and that doesn't solve the other problem of retention and education, and attracting a workforce to our industry.

From an association standpoint, we tend to take a general approach to this because our members have so many different issues. Yet, at an industry event, like the WERC conference, you'll find specific commonalities and solutions. □

STABILITY IN AN UNSTABLE WORLD.



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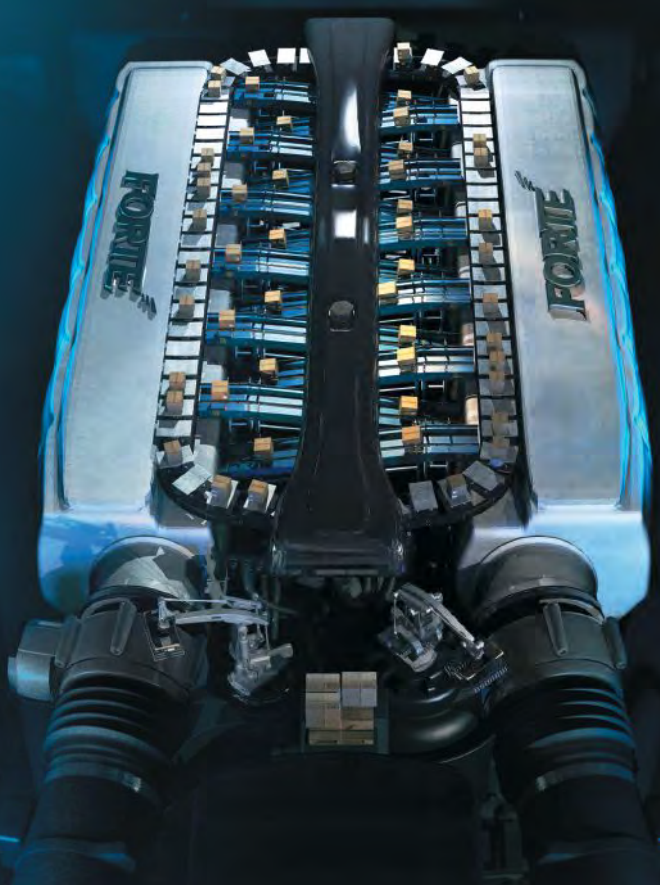

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